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ORIGINAL ARTICLES.

SPEECH DEFECT AS LOCALIZING SYMPTOMS, FROM A STUDY OF SIX CASES OF APHASIA.

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THE various defects in speech caused by lesions of the brain constitute an intensely interesting subject for study, both from the standpoint of the psycho-physiologist and from that of the practical physician, especially the neurologist.

In this paper I shall endeavor to deal with the importance of some speech-defects as localizing symptoms.

In all of the six cases of aphasia that have been reported by me in this journal[1] in connection with the surgeons, Drs. Rogers and Parkhill, who operated upon the patients, the defects in speech were the principal symptoms, and in three of them they were practically the only localizing symptoms. In these three cases, guided alone by the character of the disturbance of speech, I was able to recommend surgical procedures which proved successful in averting fatal terminations.[2] In one[3] of the other cases of the series the symptoms of speech-defect were the only ones present for a time, and were sufficiently marked from the first to establish a diagnosis of organic disease of the brain. At the time of the operation on this case for the removal of the growth from the brain, these symptoms were relied upon to determine the extent and the exact location of the tumor. In the remaining two cases[4] of the series the speech-defects constituted the troubles for which the operations were performed.

The last three cases in the series published presented defects on the motor or emissive side of the speech mechanism. The first[5] of these three is the most interesting on account of the distinctness of the symptoms, the care with which they were observed, and the limited character of the lesion found at the time of the first operation. A detailed description of all the symptoms will be found by referring to the number of this journal in which the case has been published. Briefly stated they were, a loss of the power to spell or to arrange the letters in a word; loss of the power to write intelligibly, because the letters were jumbled together in an irregular manner, but the letters of the alphabet were formed perfectly. In studying his spelling from day to day, it was observed that while there was a certain similarity in the manner in which he arranged the letters in the words he spelled the same word differently from time to time, thus showing an uncertainty in his own mind in regard to how a word should be spelled.

Bastian[1] gives the copy of a letter written him by one of Sir Wm. Jenner's patients while he (Bastian) was a resident physician in University College Hospital in 1869. The recorder states that the handwriting was very good, and that the letter, which is a long one, contained only two trifling erasures. While there are several mistakes in spelling, the principal errors consist in the transposition and omission of words. Unfortunately this case is not given in sufficient detail to enable one to determine whether the defect in writing was due to a lesion in the receptive (sensory) or emissive (motor) side of the speech mechanism.

Kussmaul[2] quotes several cases from a paper written by Bastian. One of these was observed by Hughlings Jackson. In it, the misspelling was the most glaring speech-defect. The patient in attempting to write her name, wrote "Sunnil, Siclaa, Satrena," and for her address, she wrote the following: "Sunesr nut to mer tinn-lain." In another case observed by Bastian, the patient tried to write "Royal naval medical office belonging to the Admirality," wrote "Roydnendd navendendd oforendendd Belondendd." The patient observed by Ferber, an account of whose case is quoted by Kussmaul in this connection, wrote "schrüssen" for "grüssen," "schreigen" for "schreiben," "butter" for "mutter," "omdern" for "modern," and in her own name put a "g" in place of "ch."

In none of the above-quoted cases was the

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[1] MEDICAL NEWS, June 6 and 20, July 11, August 1 and 15, September 5, 1896.

[2] Case 1, 2, and 4, *Ibid.*, June 6 and 20, August 1, 1896.

[3] *Ibid.*, July 11, 1896.

[4] *Ibid.*, August 15, September 5, 1896.

[5] *Ibid.*, August 1, 1896.

[1] Bastian, "Paralysis from Brain Disease," pp. 189 and 190.

[2] "Cyclopedia of the Practice of Medicine;" Ziemssen, vol. xiv, pp. 789 and 790.

pathologic lesion determined by an autopsy or surgical operation, and Kussmaul fails to quote the clinical records of the cases to a sufficient extent to enable one to determine the probable seat of the lesion. The spelling, however, in most of the cases is similar to that found in the fourth case of this series. This case, so far as I know, is the first one placed on record in which a lesion limited to the foot of the second frontal convolution has been found, either at the autopsy or by a surgical operation for the relief of the brain symptoms, in which the speech-defects have been observed and studied. The symptoms were carefully observed, and the primary defect in speech seemed to be an inability to arrange the letters in words in the order in which he had learned to place them. The man was intelligent, fairly well educated, and for years had held a responsible position that required him to be accurate in his spelling and writing. The defect in spelling led to his writing in an unintelligible manner. Besides the defect in spelling, there was an inability to arrange the words in a sentence according to grammatical usage, syntactic disturbances in speech or akataphasia.[1] Syntactic defects in speech are found most typically in some cases of sensory aphasia. In the second case published in this series, the power to spell was perfect, but akataphasia was pronounced.[2] (One reason for concluding that the primary defect in speech, in the third case reported,[3] was an inability to spell rather than an inability to write, was the patient's power to write readily and correctly on my spelling out the words for him.) I have a case under observation at present, in connection with Drs. Hopkins and Mager, in which the inability to spell is even more marked than in the case reported in this series. Other symptoms in the case just referred to, point to a lesion in the left frontal lobe, and an operation for the relief of the patient is contemplated as soon as the consent of the relatives is obtained.[4]

Loss of the power to spell correctly undoubtedly occurs in persons who are suffering from sensory aphasia, but these cases are easily distinguished from the cases of aphasia in which no visual or auditory disturbance of speech is found. It is probable that most cases of the loss of the power to spell due to a lesion in the foot of the second convolution will be associated with some impairment of the mind, the degree depending upon the character and extent of the lesion. Further observations are needed before we can determine whether those cases termed dyslogical paraphasia[1] can be distinguished from those forms of aphasia in which the defect in spelling is apparently the primary and principal symptom.[2]

If any conclusion is justified in the observation of one case, it would be that a lesion in the foot of the second frontal convolution on the left side in right-handed persons and probably on the right side in left-handed individuals will give rise to a defect in speech in which the principal symptom will be the loss of the power to spell.[3] It should be borne in mind that a lesion, such as a tumor, abscess, cyst, and probably thrombotic softening occurring in the foot of the second frontal convolution will interfere to some extent with articulation, the mentality of the patient, and in many cases with the function of Broca's convolution. It is probable that the syntactic disturbances in speech depend upon the impaired mental condition of the patient. "Unlike words, sentences are not stored up in memory ready for use."[4]

Does a center for writing exist? According to Bastian and others, cases of agraphia have been observed in which the patient was unable to make more than meaningless strokes. These patients have been unable to read or spell correctly. We can write with a pen held with the teeth, hand, or foot. It is very improbable that the same center in the cerebral cortex would serve to guide these various widely separated groups of muscles in writing. On the other hand, no matter what groups of muscles we employ in the formation of letters, the arrangement of the letters in a given word is always the same. It seems to me more probable that the memory for the arrangement of letters in words is stored up in the cerebral cortex. This process is learned by tedious and repeated repetition. We should naturally expect to find the cortical center in which is registered the memory pictures for the arrangement of letters in a word, to be located near the center which governs the muscles usually employed in

[1] Steinthal, "Cyclopedia of the Practice of Medicine," Ziemssen, vol. xiv, pp. 791 to 798.
[2] THE MEDICAL NEWS, June 20, 1896.
[3] *Ibid.*, August 1, 1896.
[4] Kussmaul.

[1] The patient was operated upon by Dr. Mager, the left second frontal convolution was found diseased, but the lesion was so diffuse that symptoms of aphasia lost much of their apparent localizing value.
[2] In these cases, if the loss of the power to write is due to the loss of the power to spell, is the word agraphia the proper term? It has occurred to me that the word anorthographia might be employed instead. Professor Maurice G. Dunham, professor of Greek in the University of Colorado, for some very good reasons seems to prefer the term scoliographia instead of anorthographia. The principal objection which he makes to the latter term is the use of the "an" to denote negative. "An" is in common use before arthria to denote the negative.
[3] It is possible that the primary defect is in the inability to pronounce.
[4] Kussmaul.

writing. It will be interesting to observe whether a lesion in the second frontal convolution on the right side of the brain in right-handed persons is attended with any loss of the power in spelling. So far as I can see at present, it is impossible to investigate the orthographic center in a very illiterate person.

Dr. Charles K. Mills has recorded a case of defective speech utterance from orolingual paralysis.[1] In his case, the lesion involved the lower portions of both central convolutions on the left side, the foot of the left frontal escaping almost entirely. Articulation was imperfect, but the patient could talk. In the fifth case[2] reported in this series, there was very decided weakness, in fact, almost complete paralysis, of the orolingual muscles of the right side, and an inability to utter words, except the simplest ones, with sufficient distinctness to be understood. It was impossible for a listener to understand what he read. He could utter monosyllables slowly and with an explosive sound of the lips, so as to be understood after two or three ineffectual attempts. Unfortunately his right hand was at first nearly paralyzed, and after he regained strength in this hand, it was used so awkwardly that his writing was indistinct. The writing with the left hand was no better than with the right. None of the letters were well formed, but there was no transposing or omission of words or letters. There was no evidence that Broca's convolution was affected. His attempt at writing showed no misspelling or agraphia, but rather a disgraphia. The lesion at the operation was limited to the lower portions of the central convolutions (ascending frontal and parietal). This case, as well as the one reported by Mills, points very conclusively to the existence of an orolingual center concerned in speech. It is probable that this center is bilateral, but so far as I am aware, no cases of lesion in the orolingual center on the right side in right-handed persons have been studied and reported.[3] Neither in the case reported by Mills, nor in the one reported by me, was the inability to utter words complete, as we would expect to find if the center is unilateral.

From a study of the symptoms found in these two cases of orolingual paralysis, and from the flattering results of the operation in the case reported by me, it seems to me that we are justified in recognizing an orolingual cortical center which is concerned in speech, and that under certain conditions, operative procedures, when this center is diseased, may be followed by partial restoration of the power of articulation.[4] No further comments on the last case of the series are needed beyond what are made in connection with the report of the case.[5]

Turning now to the cases of sensory aphasia reported in this series,[6] we find in the first[7] that the lesion was limited to the angular gyrus, its subcortical region and the anterior portion of the occipital lobe, that there was a condition of apraxia for all objects except those that were very familiar, and that this existed for all the sense memories. The patient manifested a state of verbal amnesia for all objects save those with which he had been most familiar. There was no auditory disturbance of speech. He could not recognize letters, figures, and colors seen. He could not understand printed and written words seen, nor read inaudibly or aloud. He could not recall objects, the names of which were seen. The power to write voluntarily, at dictation, to copy and to write the names of objects presented to him by the various senses, was at first almost completely lost. He was unable to read. He failed partially at first to write his own name or to read it after it had been written by another. He usually was unable to recognize a letter by tracing it with his finger or pencil, the movements being guided by another; neither could he call up mentally the appearance of an object, figure, letter, or word. He made a partial failure in counting numbers or money. He could not recognize a single card, although he had formerly been very fond of games.

In the third case[8] the lesion was extensive, involving the Rolandic parietal and angular regions and the centrum ovale of these. Apraxia was pronounced; verbal amnesia was present; he copied poorly, but mechanically; recognized a tune, and could sing if some one led; could recognize only a few spoken names; could name any word that was spelled aloud; was unable to read, or to write voluntarily, and could not read what he copied; did not recognize colors, but did objects; could not count in numbers or calculate, but could count money. In the second case[9] the lesion was limited to the posterior halves of the first and second temporal convolutions and the centrum ovale beneath this portion of the

[1] A "Text-book on Nervous Diseases," by American authors, pp. 409 and 410.
[2] THE MEDICAL NEWS, August 1, 1896.
[3] Dr. Parkhill has recently referred a patient to me with lesion in the right orolingual center, of thirty-four years' duration. We will report this case, conjointly, soon.
[4] MEDICAL NEWS, August 15, 1896.
[5] *Ibid.*
[6] *Ibid.*, June 6 and 20, and July 11, 1896.
[7] *Ibid.*, June 6, 1896.
[8] *Ibid.*, July 11, 1896.
[9] *Ibid.*, June 20, 1896.

cortex. The patient was mind- and word-deaf; verbal amnesia was present, apparently; there was partial apraxia; he could read, but did not seem to understand; he read aloud so that any one could understand him; he could write voluntarily his name and whisky; did not recognize playing-cards; and copied fairly well, converting printing into script. There was no visual disturbance of speech.

On reviewing the symptoms, we find that all the cases of sensory aphasia presented a condition of apraxia and verbal amnesia, but in none of them were these defects complete. In the two in which the lesion involved the angular region, there were visual disturbances of speech, such as word-blindness and inability to call up mentally the appearance of a word or letter. In the case in which the lesion was limited to the first and second temporal convolutions, there were auditory disturbances of speech, such as mind- and word-deafness at first, later word-deafness and inability to call up mentally the sound of a word or letter spoken aloud. In none of the cases was there an inability intelligently to see objects (mind-blindness). In only one was there hemianopsia, and this occurred in the case in which the lesion penetrated the centrum ovale deeply beneath the angular gyrus. In the case of extensive lesion in the angular region, there was loss of power to read or write, while in the other, in which the lesion was less extensive, but involving the angular gyrus, there was at first an almost complete loss of power to read and write. In the case in which the lesion affected the temporal convolutions, the patient could both read aloud and write, but did not seem able to understand what he had read or written. All the patients could write their names, although it was done imperfectly by those suffering from visual disturbances of speech. None of the three could count in numbers, but one could count money.[1] None could at first play a game of cards. In one, the case with an extensive lesion involving the Rolandic parietal and angular regions, the ability to recognize a word spelled aloud was very good.

We may conclude, from a study of the symptoms presented by these three cases of sensory aphasia, that apraxia and verbal amnesia have no localizing value, except to place the lesion in the sensory or receptive side of the speech mechanism; that inability to count or to play games of cards have no localizing value, as these defects are found in a few cases of motor aphasia; that word-blindness places the lesion in or near the angular gyrus; that word- or mind-deafness is evidence that the lesion is in the posterior portions of the first and second temporal convolutions. In each of these cases the subcortical as well as cortical region concerned in speech was affected.

All the patients suffering from sensory aphasia, with one exception, copied mechanically, transscribing writing into script and printing into printing, giving each letter the amount of shading found in the original, and that all the cases of motor aphasia transcribed printing and writing into script. This seems to be of considerable diagnostic importance in distinguishing the motor from the sensory forms of aphasia.[1]

[1] MEDICAL NEWS, July 11, 1896.

ENTEROPTOSIS.[2]

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ENTEROPTOSIS designates a condition in which the suspensory ligaments of some of the abdominal viscera are relaxed, causing a more or less pronounced descent of these organs.

The disease begins with a prolapse of the intestines, particularly of the right part of the colon transversum, due to a relaxation of the weak ligamentum colico-hepaticum. The colon ascendens and colon transversum, losing their ligamentous suspension, sink down, and so the colon transversum, instead of running straight across the abdominal cavity, runs obliquely from below upward. At the left end, the transverse colon is held in place by the strong ligamentum gastro-colicum. The acute angle produced at this point by the prolapse of the other end of the transverse colon, causes a partial occlusion of the lumen of the gut (enterostenosis). The transverse colon, therefore, remains contracted and empty, and gives the condition described as "corde transverse." Coincident with the descent of the transverse colon, there is a relaxation of the ligaments (mesenteries) of the small intestines, and this produces a dragging down of the stomach, and causes the liver and kidney, through the ligamentum gastro-colicum, to assume a lower position than normal (hepatoptosis and nephroptosis). Thus there may be a prolapse of all the intestines (splanchnoptosis). This enteroptosis causes en-

[1] A little brochure that contains much of deep interest to every student of aphasia has been written by Sigm. Freud, "Zur Auffassung der Aphasien; Eine Stritische Studie," Leipzig und Wien, 1891. So far as I am aware, this little book has not attracted much attention, especially in England and America. The author is at variance with the theories of Wermike and Leichtheim, but the practical results of his conclusions are nearly the same as those of the writers just referred to.

[2] Read before the Fifth District Branch of the N. Y. State Medical Association, May 26, 1896.

terostenosis and increases the specific gravity of the intestines, because they do not contain gas, thus diminishing the abdominal tension. A *ciculus vitiosus* is produced which, if not interfered with, grows worse.

The subjective symptoms of this disease are: Weakness and constant feeling of lassitude; difficulty in digestion of fats, farinaceous foods, acids, pure wine, pure milk, with an increase in the digestive troubles about three hours after meals; sleeplessness; usually constipation or irregularity of the bowels.

The objective symptoms, according to Glénard, are: (1) Splashing sound (*clapotement épigastrique*). (2) Pulsation of the abdominal aorta (*battement aortique*). (3) "Corde colique transverse." (4) In the right hypochondriac region, frequently movable kidney.

By the "corde colique transverse," Glénard means that resistance, which is found lying over the aorta from three to five centimeters above the navel, running horizontally from six to ten centimeters on each side of the median line. This gives the impression of a sausage-like body, one centimeter in width, and was supposed by Glénard to be the displaced colon transversum, for pressure on the right iliac region at the beginning of the colon ascendens produced rumbling sounds in the corde transverse.

Glénard distinguishes three different periods of the disease. During the first period (atonie gastrique par entéroptose) the patient eats everything, but experiences slight somnolence or a burning sensation after meals; about 2 o'clock A.M.; the sleep is interrupted for a few minutes. Generally there is one evacuation of the bowels in the morning, of somewhat diarrheic nature; there is a gradual loss of strength. In the second period (mésogastrique, gastroptose) the patient avoids fat, farinaceous foods, acids, milk, wine; complains of a sensation of dragging, false hunger, and emptiness about three hours after meals. About 2 o'clock A.M., he remains awake for two or three hours; suffers from constipation, interrupted once in a while by diarrheic evacuations; always feels tired, particularly when arising, and about three o'clock in the afternoon. In the third period (neurasthénique, enterostenose) the patient has lost thirty or forty pounds, and is not sufficiently nourished; he has lived on milk diet, on purées, beef-tea — on most improbable meals; complains of a weighty sensation or cramps in the stomach, and is almost constantly suffering. He does not sleep; the constipation is most obstinate; the daily enemata with difficulty effect an evacuation of fatty scybala, surrounded by mucus or pseudo-membranes from time to time. There is constant complaint of great weakness, so that he hardly leaves the room, and lies on the lounge constantly. He represents the most varied nervous symptoms—cerebral, spinal, sympathetic, both psychical and physical.

As this whole series of symptoms is caused and explained (1) by enteroptosis, (2) enterostenosis, (3) deficient nutrition, the fundamental indications for the successful treatment are pointed out by Glénard in the following way: (1) The intestines have to be raised and maintained in their position. (2) The abdominal tension must be increased. (3) The bowels have to be regulated. (4) The secretions of the digestive tract and of the annexed glands have to be stimulated. (5) The alimentation has to be regulated and the digestion assisted. (6) The organism has to be stimulated. The first two points are accomplished by wearing an abdominal bandage reaching to the navel and exerting a pressure upon the hypogastrium from below upward. This bandage raises the intestines and increases the tension of the abdomen.

To regulate the bowels, Glénard gives his patients, a quarter of an hour before breakfast, any one of the following: Natrium sulphate, 4.0, magnesia sulphate, 3.0, in half a glassful of water, or a teaspoonful or half a glass of Janos; one quarter of a glass of Rubinat; a teaspoonful of Carlsbad salt, or pills consisting of 0.05 extractum rhei. The fourth requirement must be accomplished by massage, electricity, aud lavage of the stomach; and the sixth, by gymnastic exercises.

Glénard first pointed out that the diet should contain plenty of meats, but not of milk, as was formerly customary; frequent meals should be advised, while the quantity of liquids should be greatly reduced.

As has been shown by Ewald, the best sign to recognize enteroptosis, is the demonstration of an existing gastroptosis. This can occasionally be recognized by the splashing sound, which can be produced on the left side of the abdomen over an area extending from the navel, or somewhat above it, down to the symphysis. The inflation of air is another means of detecting the position of the stomach; when the stomach is inflated, the lesser curvature, in cases of gastroptosis, is visible midway between the ensiform process and the navel, or just near the umbilicus.

Gastrodiaphany has been recommended by me as a reliable means of recognizing gastroptosis. It makes the stomach visible as a red zone on the abdomen, between the navel and the symphysis.

To recognize the movable kidney it is only necessary to practise palpation, putting one hand on the back of the patient at the lumbar region, while the other is held flat below the margin of the false ribs, covering the lower outside angle of the abdomen. By having the patient inspire deeply, the kidney, if movable, is felt to slip between both hands; slight pressure with the hand on the lumbar region will facilitate the recognition.

While Israel is of the opinion that on a deep inspiration even a normal kidney may be partly felt by this method of examination, Glénard considers all cases in which the kidney can be detected by palpation as abnormal. He distinguishes four degrees of movable kidney: First degree of nephroptosis: the lower part of the kidney can be palpated during deep inspiration; during expiration, the kidney slips back to its normal place, and it is impossible to prevent its return. Second degree: the greater part of the kidney can be palpated, and it can also be held in its abnormal position, but its superior margin cannot be felt. Third degree: the superior margin of the kidney can be reached on deep inspiration. Fourth degree: the whole kidney is accessible to palpation, even during expiration (the movable or wandering kidney of the older writers). Movable kidney is, according to Glénard, only one of the symptoms of enteroptosis.

It is generally accepted that the corset plays a predominant part in the causation of the downward displacement of the abdominal organs; confinement is also believed to be a great factor. But besides these two points, which refer only to the female sex, there are some other conditions which, likewise, predispose to enteroptosis and are common to both sexes, namely, acute diseases of a grave nature, and protracted ailments accompanied by a considerable loss of flesh.

In January, 1896, I saw 57 male patients with gastric disturbances; among them were 4 with a distinct enteroptosis and right movable kidney (third and fourth degrees); the number of females with the same disturbances amounted to 33, and 13 had distinct enteroptosis with a right movable kidney. April showed similar figures: Number of male patients, 84; enteroptosis with movable kidney, 5; number of females, 59; enteroptosis with movable kidney, 19.

Among the male patients with digestive disorders, the percentage of enteroptosis was 6.2, while in the females with the same kinds of affections, the percentage was 34.8. The great frequency of enteroptosis, which has been stated by Glénard, is fully sustained by the figures just given. Glénard, however, goes too far when he ascribes all digestive disturbances to this faulty position of the abdominal viscera, nor is enteroptosis always the only cause of all the symptoms. According to my own experience, pronounced enteroptosis may exist without any manifestations of morbid phenomena. It is also self-evident that all kinds of gastric affections will occur in cases of enteroptosis as well as elsewhere; for enteroptosis does not afford immunity against digestive disorders. Hence it appears that, aside from the diagnosis of enteroptosis, it is often necessary to recognize the existence of other factors. I must, however, concur with Glénard that in many instances enteroptosis, as such, is liable to produce symptoms, and that these symptoms can be materially improved by the treatment outlined above. The abdominal bandage (which should raise the abdominal viscera) and the restriction of liquids seem to be the most important measures, and should be applied in all cases of this affection.

Meinert[1] examined a large number of young chlorotic girls with regard to the position of the stomach, and found the greater curvature always occupying a very low position (between the navel and symphysis); he concluded that "the gastroptosis" in his cases was the cause of the existing chlorosis. The method which he used to determine the position of the stomach was that of Frerichs; it consists of giving the patient bicarbonate of soda and tartaric acid in two separate portions of water, taken in succession. The carbonic acid gas collecting in the stomach, inflates this organ. The position of the stomach then may be recognized by mere inspection or by percussion. Instead of administering two grams of each of these drugs as is ordinarily done, Meinert gave eight grams. The results this writer obtained do not represent the stomach in its natural state, but in an artificially overdistended condition. Leo[2] and Meltzing,[3] the latter using the gastrodiaphane, refuted Meinert's statement. There is no doubt that Meinert's method of ascertaining the position and size of the stomach is not a very good one, and apt to misrepresent the true condition. Although the occurrence of enteroptosis in chlorosis is quite frequent, Meinert's statement that gastroptosis is a prime factor of chlorosis is not sufficiently proven. Chlorosis is not infrequently met with in

[1] E. Meinert, "Zur Aetologie der Chlorose," Wiesbaden, 1894.
[2] H. Leo, "Ueber Gastroptose und Chlorose," *Deut. med. Woch.*, 1896, No. 12.
[3] Meltzing, "Gastroptose und Chlorose," *Wiener med. Presse*, 1895, No. 30–34.

persons not affected with enteroptosis, nor are all the patients with enteroptosis chlorotic. The corset, upon which a great deal of blame has justly been put for the causation of the descent of the abdominal viscera, and which, according to Meinert, is a great factor in the production of chlorosis, cannot be recognized as a useful and and hygienic garment, and ladies wearing it should, at least, be careful not to lace too tight.

SOME CONSIDERATIONS ON THE TREATMENT OF TYPHOID FEVER.[1]

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IT is, perhaps, the repetition of a twice-told tale to present a consideration of the treatment of typhoid fever, but it is because of the perennial interest and the practical importance of the subject that I have ventured to discuss it.

There is no longer any reasonable doubt that typhoid fever is dependent upon the pathogenic activity of the bacillus described by Eberth in 1880, and that it represents the reaction between the body and this microörganism. There are other bacteria—and notably the colon-bacillus—that more or less closely resemble the typhoid bacillus, but each has its distinguishing traits and characteristics, and each its own pathogenic peculiarities. We can thus safely commit ourselves to the proposition that the typhoid bacillus alone is capable of generating typhoid fever, with the corollary that there can be no typhoid fever without the bacillus. This statement implies at once that typhoid fever cannot originate *de novo*—that every case is derived from some preëxisting case. It is of the utmost importance to recognize this truth, as upon its appreciation depends the application of a rational prophylaxis, as well as any hope that may be entertained of the ultimate extermination of the disease. It may thus be confidently predicated that the exercise of a proper care in the disposal of the excreta in every case of typhoid fever would soon lead to the extinction of this disease.

The most common channel by which typhoid fever is conveyed is water used for drinking and other domestic purposes. As a deduction from this fact it may be fairly maintained that thorough sterilization of all water used for these purposes would lead to an enormous reduction in the prevalence of typhoid fever. The transmission may, however, take place, though far less commonly, in other ways, as through direct infection of those in attendance upon the sick, or through the handling of the excreta, the bedding, and the linen of the patient. It is further not impossible that conveyance may take place through the air by means of dried fecal matter reduced to dust.

From the foregoing considerations, it is clear why the intestinal tract generally bears the burnen of the disease, although it is recognized that other structures of the body suffer at the same time, and, in fact, that the intestinal tract may escape, while other viscera are involved. Typhoid fever is thus, like all of the infectious diseases, primarily a local process, becoming soon, however, general. In this connection, two important pathogenic factors must receive consideration. The first of primary importance is the typhoid infection. At the site of original lodgment in the human body the typhoid bacilli, under favoring conditions, undergo multiplication and give rise to the local lesions of the disease. From this point they are often widely distributed throughout the organism, and in this way they may give rise to specific secondary lesions, such as abscesses and inflammations of bone and serous membranes. The second pathogenic factor to be considered is the typhoid intoxication. As a result of the reaction between the invading microorganisms and the tissues of the body, certain poisons are elaborated that are capable of profound activity, as manifested by the general prostration, the delirium, and the pronounced constitutional manifestations. For the purposes of this communication, we shall omit further reference to the purely secondary infections and complications dependent upon other agencies than the typhoid bacillus.

Having thus formulated an hypothesis as to the mode of development of typhoid fever, the question naturally arises at once, How is the disease brought to an end? To this there two ready answers, both of which may be accepted as at least partly correct: In accordance with existing knowledge of the development of antitoxic substances in the course of infectious processes, it may be conceived that the typhoid infection ultimately results in the production of substances inimical to the life of the typhoid bacillus and antidotal to the typhoid intoxication. On the other hand, it is contended that the disease-process comes to an end because of the exhaustion of the pabulum necessary for the continued existence and activity of the typhoid bacillus. The greater significance may be attached to the first.

With these facts before us, the therapeutic

[1] Read before the Delaware County (Pa.) Medical Society, July 24, 1896.

problem is greatly simplified, although we are, as yet unsupplied with the necessary resources for carrying out the plan of treatment thus logically suggested. The remedy is yet wanting that is capable of destroying *in situ* the microörganisms, of inhibiting their pathogenic activity, or of neutralizing the toxins to which they give rise. The experiments in serumtherapy have thus far not yielded results capable of practical application in the treatment of typhoid fever, although it seems not too much to hope that the not remote future will bring a specific remedy for this disease, as well as for other self-limited diseases, one attack of which confers relative immunity from a subsequent invasion of the same disease.

The first important consideration in the treatment of typhoid fever relates to the prophylaxis. With a knowledge of the means by which the disease is most commonly transmitted, it is obvious that its diffusion will be restricted by measures looking to the provision of an adequate system of drainage and of a pure water-supply, and of the application to the individual case of the principles of isolation and disinfection. The preponderant frequency with which the disease is transmitted by means of water—and contaminated milk especially, is an indication for the avoidance of doubtful sources of supply, and, as added precautions, for reliable filtration and sterilization by boiling. Typhoid fever is not, in the ordinary sense of the word, contagious, *i.e.*, transmissible through mere association or contact, although, as has been stated, conveyance takes place through the intermediation of the excreta. Nevertheless, it is the part of wisdom to place the patient in an apartment by himself and have him visited by only the necessary attendants. The ideal mode of disposing of the excreta—including stools, urine, sputum, and sweat—would be their destruction by fire; but a more feasible method consists in their thorough disinfection by means of milk of lime, mercuric chlorid, carbolic acid, and other substances. Corresponding care should be exercised with regard to the soiled body and the bedclothing and apparel of the patient.

When the disease has developed to the point of clinical recognition, there can be no hope of its abortion. It then continues its evolution and pursues its course to the natural termination, unless interrupted by death. Not a little, however, can be done, to mitigate its severity and avert complications, and perhaps, directly or indirectly, to shorten its duration.

Among the many therapeutic measures that have been employed at different times, it may be said of antiseptic remedies, such as carbolic acid, naphthol, salol, guaiacol, etc., that while useful adjuncts, they are without curative or specific effect, and not too much must be expected from them. In their administration, further, care must be taken not to add to the intoxication of an already serious ailment. A similar statement may be made concerning antithermic or antipyretic remedies. In this connection, it is well to bear in mind that even permanent reduction of temperature does not imply dissipation of the disease and its concomitants, for clinical experience has shown that typhoid fever and other infections may exist without elevation of temperature.

So-called expectant treatment is practically no treatment at all worthy of the name, and symptomatic treatment includes only those measures that the conscientious and competent practitioner is always prepared to employ whenever demanded by the exigency.

I have reserved for final consideration the plan of treatment known as the Brand method, the faithful employment of which has resulted in a most gratifying reduction in the ordinary mortality from typhoid fever. Water has long been employed in the treatment of fever, but its methodic use dates back only to 1774, when it received such application at the hands of Dr Robert Jackson, who used warm baths, followed by cold affusions. A little later (in 1777) Dr. Wright used affusions of cold water in the treatment of himself and a companion suffering from a fever. In 1787 the method was taken up by Currie and others, and it soon became a recognized plan of treatment. To Currie belongs the credit of first laying down rules for the methodic application of cold affusions for therapeutic purposes. He recommended this measure especially at the time of the febrile exacerbation, but conceded its usefulness whenever, in the absence of chilliness, the heat of the surface was above the natural and there was no general or profuse perspiration. The temperature of the water ranged from 40 to 70° F., according to season. From this time water continued to be used in a desultory way in the treatment of febrile disorders; but it is from 1861, following the publication of Brand's monograph on the "Hydrotherapy of Typhoid Fever" that the systematic employment of cold water in the treatment of the febrile state dates. The innovation did not escape objection and antagonism, but during the thirty-five years that have elapsed since its introduction it has steadily gained in favor, until to-day it stands as the best treatment of typhoid fever in particular and of the febrile state

in general. Like the treatment of diphtheria with the antitoxin, conviction was in this instance carried also by the "brute force of figures." The method was not attractive in itself, and its application was not unattended with difficulties, but a reduction in mortality among large numbers of cases in the hands of many different observers from figures as high as thirty per cent. to five per cent. and lower could not be viewed with indifference. The method has thus, by its life-saving influence, forced its way into professional favor; but the results secured will depend upon the fidelity with which the details of the treatment are followed, rather than upon the mere use of cold water. Brand's recommendations are, briefly:

Whenever the temperature taken in the rectum reaches 102.2° F., the patient is immersed for fifteen minutes every three hours, day and night, in water at a temperature of 68° F. This is the rule, but it is not an inflexible one, and must be adapted to the needs of the individual case. The object of the treatment is to effect amelioration of the symptoms and to keep the temperature within safe limits. Thus, in an aggravated case, with profound nervous manifestations and hyperpyrexia, the temperature of the water may be as low as 59° F. and the duration of the bath extended to twenty minutes, or even more. When the temperature does not reach quite 102.2° F., it is often useful to bathe the patient for a few minutes once or twice a day at 68° F. or two or three times a day in a half-bath of tepid water (92.4° F.), using also douches gradually reduced to 68° F. In giving the full cold bath, sufficient water is employed to cover the entire body, with the exception of the head, and the temperature is kept down by the constant addition of cold water or of ice. Throughout the continuance of the bath the exposed parts of the body are vigorously rubbed, and from time to time cold water is poured upon the patient's head. Before the bath the patient is given a stimulant in the form of whisky or brandy, and at its conclusion he may be given some warm liquid food or alcohol, or both. Then, without rubbing or other manipulation, he is placed between dry sheets and lightly covered with a blanket. Usually the patient is able to get into and out of the bath without aid, but if the case be asthenic or ataxic, he may be assisted.

The good effects of the bath are seen not only in the reduction of excessive temperature, but also in a clearing of the intellect, a lessening of the stupor, a disappearance of the muscular twitching, a general tonic influence upon the nerves, and especially upon the heart and lungs, in an improvement of all of the bodily functions, in the promotion of sleep, and, finally, in a reduction of the mortality. As a rule, no medication is required, and the use of alcohol is not necessary, except, perhaps, in those who have been accustomed to it. If constipation be present at the beginning, an initial full dose of calomel (gr. viij) may be administered. In the course of the attack simple enemata may be employed.

The hydriatic treatment of typhoid fever may be employed at any stage of the disease and at any period of life. The best results are naturally secured the earlier in the attack the patient is placed under treatment. In cases coming under observation and submitted to the treatment prior to the fifth day, death may be entirely averted. Children bear the full cold bath well. In patients past sixty, it is best to use the gradually cooled bath, the water being at first about 10° F. lower than the temperature of the body, and being gradually reduced in the course of from twenty to thirty minutes, to 68° F. The only complications that interdict the continuance of the baths are intestinal perforation, peritonitis, and free hemorrhage. Experience shows, however, that complications are, in general, less common in those treated according to the Brand plan than in those treated by any other method.

The Brand method finds its widest field of application in hospital practice, but the difficulties that attend its employment in private practice are not insurmountable. The most serious one, besides firmness and resolution on the part of the clinician, is overcome by the construction of portable tubs, some of which can be conveniently folded up and readily transported.

There are, of course, other modes of employing water in the treatment of fever. Thus, we are all familiar with partial baths, tepid or gradually reduced; with spongings with water of varying temperature and with various admixture; as also with the cold pack and with applications of ice, the passage of a stream of cold water through tubes passing over or around to different parts of the body, etc. Martin Barr of Liverpool employs a continuous bath at a temperature of 90 or 95° F., such as in vogue among dermatologists in the treatment of extensive burns of the body. Fenwick of London employs what he designates an ice-cradle, which consists of iron arches fastened to the bed and placed over the patient, from which are suspended zinc buckets, partially filled with ice. Still others have employed evaporating sprays. None of these expedients, however, even approximates in efficacy the Brand plan in the treatment of the febrile state, by means of which, as has been aptly said, severe cases are converted into mild cases, and the classic picture of typhoid fever is no longer seen.

A NEW AND IMPROVED METHOD OF PERFORMING ALEXANDER'S OPERATION.

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THE more clearly the indications for Alexander's operation are becoming defined the more frequently is it being performed. In the opinion even of those who were at first opposed to it, it is of great value in correcting not only retroversion but also prolapse of the uterus. As long as the uterus can be freely brought forward to the symphysis pubis either by bimanual manipulations, or by the aid of the sound, shortening of the round ligament gives excellent results. – It is, of course, unnecessary in temporary or acute cases of retro-

version in which the uterus remains up of itself, or by the aid of an easy-fitting pessary; and it is worse than useless in cases in which there are dense adhesions, unless these latter have first been broken up by the finger introduced through an abdominal or vaginal opening into the peritoneal cavity. There are still, however, many operators of considerable ability in whose hands the operation has proved difficult or even impossible, while in some cases it has been followed by disastrous results. One surgeon, who is afraid of nothing in general surgery, has such a horror of this operation that he has decided never to attempt it again, owing to failure to find the ligaments, even after an elaborate dissection. Another, the pioneer of gynecology and abdominal surgery in Canada, attempted the operation only once but failed to find the ligaments or to sew up the separated pillars of the external inguinal ring, with the result that the woman soon after had two enormous hernias, which she has steadily refused to have sewed up, preferring to exhibit them as a failure of surgery. Many other instances could be mentioned in which operators of the first class dislike the operations, not because they are dissatisfied with the results, but on account of the difficulty and uncertainty of finding the ligaments. The writer in his first few cases had the same experience, having been obliged, in one case at least, to abandon the Alexander operation and perform ventrofixation. It was only after the discovery of the method which will now be described that he has been able to find the ligaments invariably and quickly. After an experience of about forty operations, performed according to this method, he is able to find the ligament and draw it out in from half a minute to a minute and a half. He believes that this method is original, never having seen it described in any of the journals nor witnessed its performance by any operator. It is, however, exceedingly simple and easy, so much so, indeed, that it can almost be performed with the eyes shut, and by the sense of touch alone.

Operation.—The skin is shaved and carefully disinfected in whichever manner the operator prefers. The tip of the left index finger is then pressed firmly down upon the spine of the pubis, when, in many cases, the external inguinal ring can be distinctly felt. An incision directly over this spot is then made, diverging at its outer end about thirty-five or fifty degrees from Poupart's ligament. The incision must go through the skin, superficial and deep fascia, but no farther, and even for fear of severing any of the fibers of the intercolumnar fascia, the last part of the incision should be made with the handle of the scalpel. The pearly, glistening fibers of the external oblique will then be seen, with the intercolumnar fibers running across them, holding the pillars of the ring together. Some fat will appear bulging from between these pillars, and if the finger-tip be pressed upon this fat, the latter will recede into the ring. The secret of success now lies in *not* cutting through this fat down to the spine of the pubis, as Alexander directed, but in keeping it intact, for if this fat be caught up in a Pean's forceps and pulled upon, the round ligament is drawn up. With the tip of the left index finger covering the ring, a pair of closed Pean's forceps is slipped into the canal under the finger and opened, when the only things in the canal, namely, the round ligament and the nerve running with it, are caught by the forceps, and drawn out. All instruments are laid aside, the separation of the ligament from the nerve, and from the fascia which connects the ligament to the canal, being accomplished by the fingers, which are quite strong enough to pick out the ligament, but not sharp enough to cut it. No matter how small the ligament may be at the ring, on drawing it gently out it will be found to be of good size. The ligament is drawn out until the peritoneal covering appears, and this is stripped back with the fingers. The ligament on the opposite side is then found and drawn out in the same way. The ligaments are then anchored in the following manner: While a gentle traction is maintained by an assistant, a fine silk suture is passed through the transparent anterior wall of the inguinal canal, taking in half of the round ligament, and tied. The next stitch takes in Poupart's ligament, half of the round ligament, and then the superior pillar of the ring, and this, when tied, brings the pillars of the ring together as well as attaches the round ligament. If the ring is still too open another stitch may be placed. The wounds in the skin are then brought together by interrupted silkworm-gut sutures. The advantages claimed for this operation are:

1. A one-inch incision in the skin is sufficient.

2. There is no need of dividing the fibers of the intercolumnar fascia, which is the sole support of the external inguinal ring.

3. The round ligament can be quickly found as the natural position of the structures of the ring is not disturbed.

4. The ligaments can invariably be found, although it has been claimed by some that the round ligament is sometimes absent, it is more probable that it is always present, but being split up it be-

comes so weak that it breaks, or, in some cases, some other structure is mistaken for it. There is nothing in the inguinal canal except the round ligament and ilio-inguinal nerve, and if the knife and scissors be laid aside as soon as the deep fascia has been cut through and neither the canal nor the ligament be wounded, then, in grasping whatever is in the canal, we are sure to find the round ligament.

5. By the method above described hernia would be impossible, at least as the result of the operation, for not a fiber is cut that supports abdominal pressure. Even if the woman had a hernia before it would be radically cured by Alexander's operation, performed according to this method. Silk is employed because catgut does not last long enough to give permanent strength to the ring. The one relapse referred to above was due to the employment of silkworm-gut sutures which were only left in two weeks instead of permanently. But in this case there was no hernia.

One cannot but feel sorry to see a good operator baffled by such a small but sometimes difficult operation, but the difficulty is almost entirely due to splitting up the fan-like expansion of the ligament, while following Alexander's directions, which so much reduces it in size and strength that it breaks off when drawn upon. Another source of difficulty comes from what might be called making a false passage by cutting down too freely upon the external oblique, when a little nick is made which may easily be mistaken for the external inguinal ring. A round band of muscle is found in this opening, which is pulled at in vain, for it is a part of the external oblique muscle. When this accident occurs, or, if indeed for any other reason the ligaments cannot be found and drawn out, it is better to leave that side alone for a few minutes and proceed with the opposite side; when, returning to the first side again, the parts will have settled into their normal position, and the real canal will be found.

CLINICAL MEMORANDUM.

REPORT OF A CASE OF ECTOPIC GESTATION ASSOCIATED WITH TUBERCULOSIS OF THE TUBES, PLACENTA, AND FETUS.[1]

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In so far as I have been able to discover, the case which I present in this report is unique in being the first case of extrauterine pregnancy associated with tuberculosis of the tubes, that has yet been observed. While the field of the etiology of ectopic gestation is thus enlarged by the admission of a new factor, the case becomes more important because of the undoubted proof of the existence of tuberculosis in the placenta and fetus. For this reason its relation to the question of the inheritance of tuberculosis gives the case the greatest scientific interest. This question, still open to discussion, receives here important evidence as to the possibility of the infection of the child from a diseased parent in its intrauterine life.

The patient who forms the subject of this report was from the clinic of Dr. James N. Martin, Professor of Gynecology and Obstetrics in the University of Michigan, and to his kindness and courtesy I am indebted for the history of the case and the results of the operation. The history is briefly as follows:

Mrs. F. C., thirty-eight years of age, had been married for thirteen years. She had had no children and no abortions. Her periods had always been regular until August, 1895. At that time she menstruated in the second week, and then did not have a return until February, 1896. From August to October she felt well, but early in that month she had a sudden attack of sharp and sickening pains low down in her left side. The patient described these pains as darting in all directions, and "feeling as if the navel was being pulled backward." There was a decided tendency to collapse, but the symptoms soon subsided. Two days after she had another, but less severe attack, and six days later she was again attacked with pains so severe that the use of morphin was necessary. After the attack the patient felt very weak and faint; a general peritonitis followed, and it was thought that there was an intestinal obstruction. From this attack she recovered slowly. Four weeks later she had sensations of throbbing, heat, and pain in the pelvis. This was followed by an abundant dark-brownish discharge from the vagina, containing soft, cheesy masses, looking like thick pus. Toward the end of each discharge an offensive odor was noticed. These discharges continued at intervals for about three weeks, being always preceded by sensations of throbbing, heat, and pain. At this time there was passed something resembling a small sack. From the beginning of the trouble the patient gradually declined and lost strength. She could not rest upon either side because of drawing sensations.

Her periods returned in February and again in March. These lasted but one day, the usual duration having been from one and a half to three days. The amount was small and there was much pain. She had also at times a thick white discharge from the vagina, small in amount.

She was admitted to the University Hospital on the 26th of March, 1896. Her general condition at this time was fair, there was a slight anemia; she was weak but not emaciated. Her appetite was fair, but digestion was not normal. The bowels were regular. Her locomotion was not difficult. There were no symptoms on the part of heart or lungs. During the week preceding the operation she had no temperature, and there was nothing in the general aspect of the case to suggest tuberculosis.

The physical examination was made on the 27th. The examination of the heart and lungs was negative. On the

[1] Read before the Michigan State Medical Association, June, 1896.

left side and low down close to the walls of the pelvis, there were dulness and some thickening. The vault of the vagina was tense. The cervix and uterus rested backward, the uterus being immovable, and very sensitive. It measured two and a half inches. At the left of the uterus, extending obliquely outward and upward toward the wall of the pelvis, there was an oval mass, rather irregular in outline and very sensitive. This pushed the uterus to the right, and the cervix somewhat backward. No examination of the blood was made. The urine examination was negative with the exception of the presence of a small amount of pus. Neither this nor the vaginal discharge was stained for tubercle bacilli.

With the exception of the cessation of the menses, the patient had had no symptoms or signs that would lead her to believe that she was pregnant, and she did not think that she was in that condition. The diagnosis of extrauterine pregnancy was, however, made by Dr. Martin, and the patient was prepared for operation. This took place on the 3d of April.

A median incision was made. The parts were found to be very vascular, and there were many adhesions between the uterus, appendages, and intestines. The right tube was found to be tortuous and enlarged, and the ovary cystic. These were removed and the stump cauterized. In the fimbriated extremity was a nodular hemorrhagic mass, about the size of a hazelnut. This was separated during the operation and preserved for future examination. The left ovary was found in about its normal location. It was enlarged and cystic. Above it, and attached to it by many adhesions, extended the thickened and twisted tube which passed upward into a mass about the size of a cocoanut. This mass was covered by friable adhesions, and lay up well toward the intestines. The distal portion of the tube passed into the lower surface of this mass and was lost in the adhesions covering it. About an inch to the right of this the greatly thickened tube was again found and traced on to the uterus, the cyst, therefore, arose from the tube about an inch and a half from this organ. The mass was dissected out with the greatest difficulty. When the adhesions covering the upper surface were removed, the head of a fetus was seen protruding from a rent in this portion of the mass. In removing the cyst the distal portion of the tube, together with the ovary, was separated. These were also removed. The uterine portion of the tube was severed about one-half inch from the uterus, and the stump cauterized. The cyst was then opened in the presence of the class and the fetus demonstrated, but the tubercular nature of the tubal disease was not then suspected. After the demonstration, the specimens were placed in four per cent. solution of formalin and brought to my laboratory.

On the next morning I began my examination of these, with the following results:

Right ovary and tube.—The right ovary was about the size of a small walnut; its surface was slightly nodular. Between it and the tube there was a mass of new tissue, about one-fourth of an inch thick, nodular, and hemorrhagic. From this mass a piece attached to the fimbriæ had been removed during the operation. The cut surface of the ovary showed the usual hyalin and cystic degeneration of the Graafian scars. The gross appearance of the small hemorrhagic mass was so characteristic of the hemorrhagic tubercles of the peritoneum, that it was at once cut and stained. The suspicion was confirmed by the microscopical picture. The mass consisted almost entirely of epithelioid cells; in some portions there was a reticulum of rather coarse connective-tissue fibers. There were also large areas of caseous necrosis, and among the epithelioid cells at the periphery of the caseated areas there were occasional giant-cells with many nuclei. Many of these giant-cells showed beginning caseation. There were but few blood-vessels. Large areas showed extensive recent hemorrhages, while others gave evidence of old extravasation by the large amount of hemosiderin scattered throughout the tissue. Sections of this mass were stained for tubercle bacilli in the usual way, with carbolic fuchsin, and the presence of the bacilli in scanty numbers was demonstrated.

On cutting into the distended right tube it was found to be filled with a soft, cheesy substance, which had not been entirely hardened by the formalin. Smears were made from this and stained for tubercle bacilli, with negative results. Thin transverse sections of the tube were then hardened in absolute alcohol, embedded in celloidin and cut. Some of these sections were stained with the Van Gieson's stain, and others with hemalum. These sections, on examination, were found to give a beautiful picture of tubal tuberculosis. The wall of the tube was much thickened, the vessels were congested, and there were numerous areas of hemorrhage and small-celled infiltration in the connective tissue, and between the layers of muscle. Small miliary tubercles were also numerous throughout the wall and under the outer coat. In many sections the lumen of the tube was entirely filled by a mass of tubercles in all stages of growth, the epithelium of the plications of the mucosa being entirely lost. The tubercles were chiefly epithelioid, with a limited small-celled infiltration around the periphery. In some sections giant-cells were numerous, in others only a few could be found. Extensive areas of caseation with occasional masses of calcification were found in some sections. In others the lumen was only partly obstructed, and numerous small miliary tubercles were scattered through the mucosa just beneath the epithelium, which was preserved. These tubercles were epithelioid, with a moderate small-celled infiltration. Giant-cells were numerous, but caseation was not extensive. Masses of calcification were not uncommon. In many places the folds of the mucosa presented a perfectly normal structure, except for the presence of the tubercles, but in others there was a marked inflammatory process with destruction of the mucosa, and the presence of large areas of small-celled infiltration. Some of these areas were freshly hemorrhagic, others were full of hemosiderin. Toward the uterine end of the tube the process became more miliary in type, and less marked. The sections of this tube stained for the bacilli gave negative results.

Left ovary.—The left ovary was much larger than the right, about the size of a large walnut. The surface was

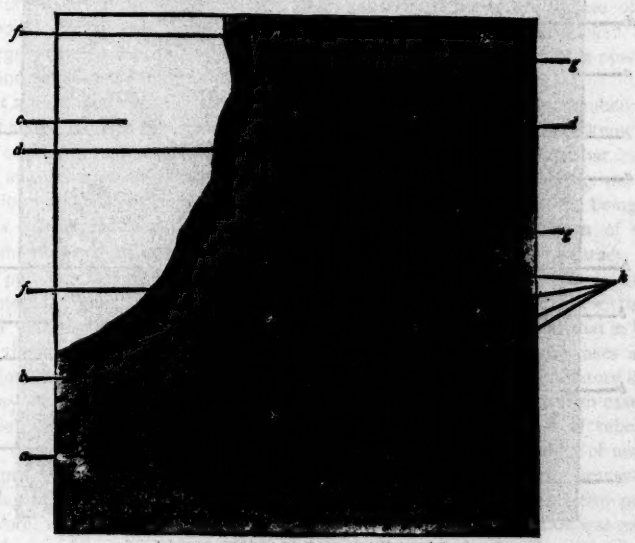
uneven and covered with the stringy remains of many adhesions which had bound it to the cyst. Many small cysts projected on its surface, and on its upper margin a true corpus luteum presented. The cut surface showed numerous small cysts, hyalin scars, and a true corpus luteum, about three-quarters of an inch in diameter, and of a pale yellow. The convoluted inner margin surrounded a mass of coagulated mucin which was slightly hemorrhagic. The fimbriated extremity of the tube was occluded by a small hemorrhagic mass, and in the fimbriæ were several small cysts and a few small, firm, yellowish nodules. The tube was much distended and twisted, but became about normal in size at the point where it passed into the cyst. On the surface of the tube and ovary there were several small, irregular, brownish masses attached loosely by thin bands of adhesions. Sections of these nodules showed them to be hemorrhagic tubercles of the same character as the one from the right ovary, having the same resemblance to the hemorrhagic tubercles so often found on the peritoneum.

Sections of the distal end of the tube, when examined microscopically, gave a picture similar to that of the right side. There was a miliary tuberculosis of the mucosa, but in some sections the appearance was that of a diffuse process affecting also the walls of the tube. There were large areas of caseation and calcification. Sections from this part of the tube, stained for the tubercle bacilli, gave negative results. The portion of the tube between the uterus and the cyst was also twisted and greatly distended, especially at the point where it passed into the cyst where its diameter reached an inch. It was filled with yellowish material of the consistence of firm cheese. The microscopical examinations of sections taken from this portion of the tube showed a chronic diffuse tuberculosis rather than a miliary process. The lumen was almost entirely filled in some places by a reticulated tubercular mass containing numerous giant-cells; and there were many areas of caseation and calcification. Only a few of the epithelial folds remained preserved. In many places the process extended into the muscular coat, and quite large tubercles were occasionally found there.

Cyst.—The cyst consisted of an outer capsule inclosing the red, spongy, and irregular-shaped mass, which comprised the placenta and the fetal membranes. The outer surface of the cyst was rough, somewhat irregular, and covered with the remains of stringy adhesions. On cutting through the wall numerous yellow areas were found, of varying size, from that of a pin-head to that of a small finger-nail. Some of these were firm, others were soft and cheesy. These masses extended throughout the placenta and fetal membranes. In the cavity of the cyst lay a male fetus, flattened and somewhat macerated, about seven inches in length. Its age was evidently between three and four months, the finger-nails and the glans penis being formed, but the prepuce and scrotum not yet developed. The umbilical cord was about eight inches long, and arose from the lower part of the cyst, very near the large tubercular mass in the uterine portion of the tube.

Fetus.—At about three-fourths of the length of the cord, from its origin toward the fetus, there were several well-marked nodules, one containing yellowish caseous material, the largest one quite firm, except in its center,

FIG. 1.



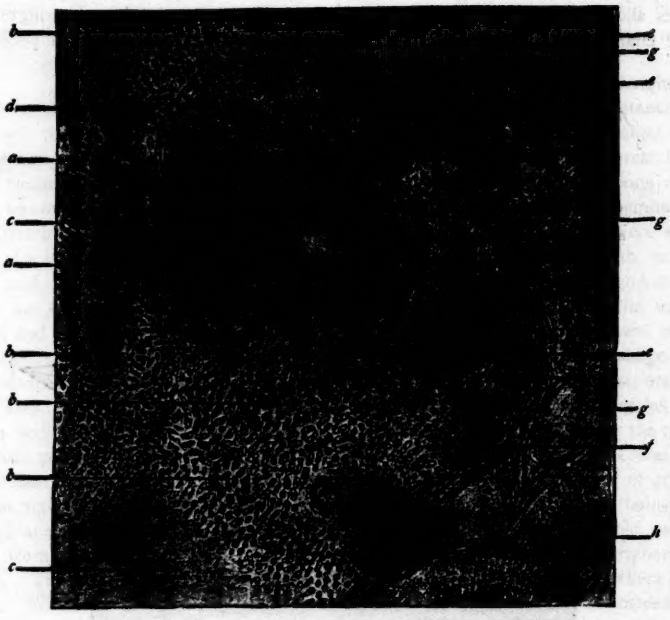
SECTION OF UMBILICAL CORD (ABOUT 175x).[1]

a—Normal tissue of cord. *b*—Wall of umbilical vessel. *c*—Lumen of vessel. *d*—Areas of caseation. *f*—Small-celled infiltration. *g*—Epithelioid cells. *h*—Masses of calcification.

[1] Made from formalin-hardened and celloidin-imbedded portion of cord, stained with Van Gieson's stain. Owing to the partial necrosis of the cord it was necessary to greatly overstain in order to bring out the nuclei, the tuberculous area, however, staining much more deeply than the tissue of the cord.

which was soft and yellow. These were cut off for hardening and embedding. The fetus was also opened, and the liver, spleen, kidneys, and lungs, were removed and hardened. These organs were almost entirely necrosed, the liver consisting only of a reddish, cheesy mass, crumbling into bits. Some of the yellow areas in the cyst-wall and placenta were also prepared for examination. The microscopic examination of the sections taken from the cyst-wall showed it to be the greatly distended tube, as the thin layers of muscle could still be detected. The yellowish areas in the wall proved to be giant-celled epithelioid tubercles with calcification. The examination of the similar areas in the placenta showed them to be the same thing. Throughout the whole placental tissue typical tubercles could be found. In one section, stained for tubercle bacilli, their presence was demonstrated.

FIG. 2.



TUBERCULOSIS OF PLACENTA (170x).[1]

a—Epithelioid cells. *b*—Giant-cells. *c*—Areas of caseation. *d*—Small-cell infiltration. *e*—Masses of calcification. *f*—Fibrin. *g*—Placental villi (Most of these show mucous degeneration and calcification). *h*—Red blood-corpuscles.

The tuberculous changes in the placenta could be separated into two groups according to their location, a villous and an intervillous form. In the first the earliest changes took place within the villus itself, the epithelioid cells arising from the connective-tissue cells of the villus, or possibly from the endothelial cells of the placental capillaries, though this could not be shown. Whatever the origin of the tubercle, it is certain that in its development the connective-tissue cells of the villi play the chief part in the production of the epithelioid cells. In those villi in which the process was in an early stage and confined to its inner portion the outer surface remained intact, but with the increased growth of the tubercle this was lost, and the epithelioid cells had broken through into the intervillous spaces. In its further growth the tubercular tissue completely filled these spaces, and in many cases extended around normal villi which stood out sharply against it. The intervillous tubercles were far more abundant than those originating primarily in the villi. In these the first change observed was a proliferation of cells on the surface of the villus at a point where the outer layer of cells could no longer be seen. The connective tissue of the villus, however, presented no change. It is probable that here the epithelioid cells arose from a proliferation of the cells covering the villi. The growth of the tubercle is then outward into the blood-spaces and consists of a proliferation of its own epithelioid cells. This growth, in many cases, was very extensive, filling in completely the spaces between many villi and entirely surrounding them. In many cases prolongations of epithelioid cells could be seen extending out into the masses of fibrin which filled many of the blood-spaces. The areas of caseation were in those parts of the new tissue farthest away from the circulating blood, and, as a rule, the giant-cells lay in the central portions of the mass, and not at the periphery. In some cases the tubercular growth seemed to extend inward into the tissue of the villi as well as out into the blood-spaces. The majority of the villi primarily affected, as well as those surrounded by tubercular tissue, showed more or less degeneration. In many of them the entire outer layer of cells was lost, the connective-tissue nuclei stained very faintly, and there was mucous or fatty change with large

[1] From portion of placenta hardened in formalin and alcohol; cut in celloidin and stained with hematoxylin.

masses of calcification. These changes are all shown in the drawing in which the intervillous form is reproduced.

As to the manner of infection of the placenta, it seems very probable that the bacilli set free from the diseased maternal structures of the tube came with the maternal blood into the intervillous spaces. Here they were deposited upon the surfaces of the villi of the fetal placenta and set up their characteristic changes. As to the primary tubercles in the villi the origin is not so clear. It may, however, be supposed that their production may be due to an entrance of bacilli into the circulation of the villi, and hence into the fetal vessels, at those points where the epithelioid cells have grown into the villus from its surface; and with the caseation and breaking down of the new tissue the bacilli have been set free into the capillaries of the villi, and so could pass into the circulation of the fetus. Since it is definitely shown that the placental tissue has no immunity against tuberculosis, there is no reason to believe that the spread of the process through it would differ in any way from that in any other part of the body.

The sections from the nodules in the cord showed, near the necrosed wall of a large vessel, a loosely reticulated tissue of epithelioid cells and small-celled infiltration. No giant-cells were found, but the character of the tissue with areas of caseation marked it as undoubtedly tubercular. The microscopical examination of the internal organs was negative. The liver consisted almost entirely of formless dead matter. Hundreds of sections of this were stained for the bacilli with negative results. It is greatly to be regretted that we did not recognize the existence of tuberculosis before the specimens were put into the formalin, as the presence of bacilli in the internal organs might have been shown by injecting animals with portions of the organs, or by making cultures from them. Only in the lung was anything like a tubercle found. On cutting this organ, after hardening preparatory to imbedding, two whitish areas about the size of small pin-heads were seen. On section these proved to be two small areas of complete necrosis where the structure was lost, while the tissue about showed faintly staining nuclei without this loss of form. These were, therefore, very highly suggestive of miliary tubercles, but the fact could not be positively decided. One of my assistants thought that he discovered tubercle bacilli in a section of the kidney stained for these, but when I went to look at them they could not be found. Therefore, so far as the fetus is concerned, the actual demonstration in its structures of tubercular changes must be confined to the membranes and cord, but it seems almost certain that the internal organs must have been similarly affected, though this could not be demonstrated beyond all doubt.

The patient died of general peritonitis on the 13th of April, ten days after the operation. An autopsy was refused, so the existence of tuberculosis in the other organs could not be ascertained. As mentioned before, there were no signs or symptoms which would lead us to suspect any other localization of the disease, so that I think the case may be looked upon as a primary tuberculosis of the genital tract. From a sister of the patient it was learned that a year and a half ago the latter's husband had been ill with fever, night-sweats, general weakness, and loss of flesh, and was on this account thought to have consumption, but he afterward entirely recovered. The family physician, in answer to my letter of inquiry, informed me that the husband is now perfectly well, without signs or symptoms of tuberculosis. Specimens of his urine, which were sent to me for examination for tubercle bacilli, have not arrived, so I have been unable to throw any definite light upon the etiology of the patient's condition, or to establish any relation between it and her husband's symptoms of a year and a half ago.

In conclusion, tuberculosis of the tubes, it seems to me from this case, must be considered as an etiological factor in the production of ectopic gestation. If the obstruction of the tube hindering the progress of the ovum toward the uterus is the chief factor, we have in the almost complete obliteration of the canal by the numerous miliary tubercles in the mucosa, a most favorable condition for its occurrence. It is very probable that the salpingitis which is found to exist in almost every case of extrauterine pregnancy, and which is usually looked upon as the causal factor, may, in more cases than is now suspected, be found to be tuberculous.

Up to a very short time ago, tuberculosis of the female genital tract, though it had been known to exist for a long period of time, did not assume that importance which it is now beginning to hold. During the last three years it has been shown that far from being a rare disease, it occurs in a very large proportion of all the cases treated for inflammatory disease of this tract. Williams, of Johns Hopkins, in a very exhaustive article in the "Johns Hopkins Hospital Reports for 1892," reviews the subject up to that year. He makes the statement that in his own experience, about eight per cent. of all the cases in which the appendages are removed for inflammatory disease are tubercular; in other words, every twelfth case of adherent tubes and ovaries, or pus-tubes, is of tubercular origin. He further emphasizes the difficulty of making a microscopic diagnosis. Of his cases only twenty-five per cent. were suspected tuberculosis, seventy-five per cent. being unsuspected as far as this condition was concerned. Since the ultimate diagnosis is, therefore, a microscopical one, it is very probable that a wider experience in making these examinations will increase greatly the proportion in which it is found to occur. The importance, on this account, of a technical examination, as a matter of routine, in all of the cases of tubal inflammation, cannot be too strongly urged.

Tuberculosis of the ovary is not so common as that of the tubes, but still occurs so frequently that it cannot be looked upon as a rare condition. It is most frequently met with on the surface of the organ, but Williams and numerous other observers have found it in the body of the ovary, even in the walls of cystic tumors. With it there is usually found a tuberculosis of the tubes or uterus. In our own case the small nodules attached to the surface of the ovary are really tubercles of the peritoneum. It is here worthy of note that tuberculosis of the tubes must be looked upon as perhaps the most important factor of infection in tubercular peritonitis. It is due largely to the fact that laparotomy has lately been so extensively adopted

as a cure for this condition that the occurrence of tubercular salpingitis has been discovered to be of so frequent occurrence, since in the majority of cases the conditions have been found to be coexistent. The small nodules that were found in this case may, I think, be looked upon as an early stage of tubercular peritonitis in which the infection undoubtedly arose from a diseased tube. The location of the tubercles upon the surface of the ovary and in the fimbriated extremity all point strongly to this mode of origin. It should be mentioned here, however, that some authorities believe the tubal disease to be always secondary to that of the peritoneum, the tube taking in the bacilli from the peritoneal cavity.

Up to the date of Williams' article in 1892, only one case of tuberculosis of the placenta had been reported, and from the description given of that case its nature is somewhat doubtful. But F. Lehmann, in 1893 (*Deutch. med. Wochenschr.*, 1893), found typical tubercles in the placenta of a woman dying from acute miliary tuberculosis in the seventh or eighth month of pregannecy. Schmorl and Kockel, in 1894 (Beiträge v. Seigler, xvi, 1894), also made a report upon this condition, so that this is the third instance in which placental tuberculosis has been reported. Schmorl, Birch-Hirschfeld, and Landouzy, had, however, demonstrated the presence of the tubercle bacilli in the blood of the placenta and of the fetal organs, and were able to make cultures and successful inoculations with material from these organs. Histological changes were not definitely ascertained by these investigators.

The presence of the tubercles in the umbilical cord makes the case important, because it is the first one reported in which that condition has been found. This gives added evidence to the still-mooted questions of the inheritance in the child of tuberculosis from the mother. I regret deeply that I could not satisfy myself as to the presence of tubercle bacilli in the internal organs of the fetus, as it seems almost certain that they must be present.

The cases mentioned above, in which the presence of the bacilli was demonstrated in the fetus, were all cases of acute miliary tuberculosis, the mother dying in pregnancy. It seems very improbable that infection of the fetus in this disease can play much part in the inheritance of tuberculosis because of the death of parent and child before birth occurs. It would be more important to prove the possibility of infection from a localized tuberculosis of the tubes or uterus in which condition the fetus might go to full term and delivery, and so come infected into the world. This case, I think, goes very far toward proving the possibility of this event.

MEDICAL PROGRESS.

Vaginal Disinfection.—The disinfection of the vagina before the birth of a child has been discarded in many lying-in hospitals, and it has been widely claimed that such previous disinfection was a positive danger on account of the possibility of carrying germs from the external genitals into the vagina to set up puerperal fever. AHLFELD, who has recently published "*Ante-partum* Vaginal Disinfection" (*Deut. med. Wochenschr.*, 1896, No. 13), an elaborate statistical comparison of the results obtained in the different maternity hospitals of Germany, attacks this view, the correctness of which is not sustained by his figures. Reckoning only normal labors, the lowest mortality percentages were obtained in Würzburg, Marburg, and Halle, these hospitals having respectively 0, 28, and 48 deaths per hundred thousand, *i.e.*, an average of 0.014 per cent. In all of these hospitals vaginal disinfection is employed, and in no other hospital has such a favorable result been obtained.

General Suppurative Peritonitis Cured by Laparotomy.—Suppurative encysted peritonitis is often caused by laparotomy, not so the generical purulent form. JABOULAY (*Province Médicale*, May 2, 1896), has operated upon thirteen cases of the latter, with three successes. The general condition of the patient was good in every case which had a happy termination. The operation consisted simply in opening the peritoneum and draining it by several rubber tubes. Manipulation of the intestines was carefully avoided, and no lavage was employed. The wound was lightly stuffed with gauze and left open. This same course of procedure was adopted in all cases, however caused, and even in the presence of fecal matter.

THERAPEUTIC NOTES.

Sarcoma of the Skin Cured by Arsenic.—A case of sarcoma of the nose, with secondary nodules in the face, treated by POSPELOW (*Arch. f. Dermatol. u. Syphilis*, vol. xxxiv., part 2) with large doses of arsenic (up to three-fifths grain daily) for a considerable period. The tumors entirely disappeared, and two months later had not recurred. The author expresses himself as in no way certain that recurrence will not yet take place. He warns others against too early abandonment of the treatment in similar cases, as very large doses must be given for two or three months, at least, before a result is looked for. The character of the tumor was in this case determined by histological examination.

Local Treatment for Neuralgia.—SABBATINI recommends as an application in neuralgia:

℞ Menthol } aa 3i
Guaiacol }
Alcohol. absolut. 3xviii

A dram of this mixture is to be rubbed lightly into the affected part two or three times a day. In the intervals a cotton dressing is employed.

Pruritus Vulvæ Cured by Cleanliness.—In a paper recently presented to the Gynecological Society of Berlin, RUGE (*Berlin. klin. Wochenschrift*, June 22, 1896) insists on the importance of cleanliness in pruritus vulvæ. The disease is almost always purely local, and a thorough cleansing of the genitals, externally and internally, with soap and hot water will remove the germs, and so cure even the worst cases, almost without exception. In gonorrhea a similar treatment is beneficial.

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SATURDAY, SEPTEMBER 19, 1896.

THE OPTICIANS AS OPHTHALMOLOGISTS.

AN effort was made during the last session of the New York Legislature to pass a bill entitled "An Act to Incorporate the Optical Society of the State of New York, etc." This objectionable measure was discussed at the time in the columns of the NEWS, and the efforts of its promoters were defeated. But as it bids fair again to engage the attention of the Legislature during the coming winter, it seems appropriate to consider the merits of the case as set forth in a recent issue of the *Optical Journal*. The writer says: "It is now pretty generally conceded among oculists, opticians, and the public, that the time has arrived when the practice of adapting glasses to the sight should be regulated by law."

This is an admission we are pleased to note, but the question naturally arises, is there any reason for more laws on the subject? Those already existing seem to cover the ground sufficiently, and define plainly enough who shall practise medicine in the State.

By their provisions some people, not physicians, are exempt from the application of the Medical Act, namely, manufacturers of artificial eyes, limbs, and orthopedic instruments or trusses, and in fitting such instruments on persons in need thereof. But it does not exempt any class of men who fit eye-glasses, and, as the fitting of eye-glasses for the relief of headache, neuralgia, or any reflex due to defective vision is practising medicine quite as much as the giving of remedies of any kind for the relief of any of the ailments to which flesh is heir, it seems as if the adapting of glasses to the sight were sufficiently regulated by law at the present time.

Admitting the truth of this argument, it follows then that the remaining portion of the article above quoted loses whatever force it would otherwise have. For instance, it goes on to say, "At the present time, physicians and opticians alike are lawfully engaged in the practice of optometry. . . . Therefore, any legislation which would interfere with such vested rights, would not only be cruel and unjust, but also unconstitutional."

If the opticians have been *lawfully* practising optometry, as the gentleman puts it, what is the use of complaining at all; why do they not go on quietly practising it and say nothing about it?

The truth of the matter is that the practice of optometry by the optician is an invasion of the prerogatives of the medical practitioner, and is therefore not lawful.

The fitting of glasses in hypermetropia, myopia, and astigmatism, the discrimination between amblyopia without optical lesion and that due to disease, the determination whether muscular defects are due to refractive errors or to grave spinal lesions, all these and many more tell us plainly that the fitting of glasses to the eyes should be in the hands of the physician alone, whose medical education and training make him competent to deal with these questions, which even to his mind are sometimes difficult, if not impossible, to solve.

The adjusting of spectacle frames, the proper centering of lenses, and many of the details of the optician's calling, necessitate experience and knowledge, as much as the compounding of prescriptions for drugs. If the opticians would confine their efforts to perfecting their ranks in this particular, we feel confident that the coöperation of the medical profession would be theirs.

It is a simple matter to talk of the "vested rights" of the opticians, but they have no rights that are greater than the vested rights of citizens generally, and efforts to obtain "rights" that would be detrimental to the public weal ought never to meet with success, nor will they in this particular if the profession will assert its rights, insisting as a necessary requirement of all who desire to become practitioners in any sense, that they comply with the laws govering medical practice.

RECENT PROGRESS IN GYNECOLOGY.

SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS.

PROBABLY no department of gynecology has received so much attention as displacements of the uterus, and of these, retroversion has been the most important. This condition was one of the earliest to attract the attention of the specialist, and received its due share of attention in the way of treatment by tampon and pessary. The next step in the evolution of the treatment, was the introduction of operative procedures. These consisted in plastic work, which aimed at the restoration of the floor of the pelvis, and the reëstablishment of the integrity of the vaginal walls. This departure from tampon and pessary, necessarily implied a lack of satisfaction in the efficacy of their use; but, while it recognized the wisdom of operative interference, it was itself founded upon a false principle. This error consisted in the assumption that the support of the uterus came from below.

Nature's plan of sustaining the various organs of the body in their respective positions, is that of suspension by ligaments. The brain, the heart, the lungs, the liver, spleen, kidneys, all are suspended by ligaments from above. The uterus, being the lowest organ in the body, was supposed to rest on the floor of the pelvis, and, therefore, offered the only exception to the rule of suspension. The inadequacy, however, of all operative procedures for the restoration and building up of supports in the parts below, eventually opened the eyes of gynecologists to the fact that the uterus had ample ligaments to sustain it in place, even when the perineum was entirely obliterated, and the question arose, why then should not the uterus be amenable to the systematic plan of nature, and depend on its ligaments for position and support? This was a question whose answer came with the asking, and malpositions came to be recognized as the result of relaxation in the uterine ligaments. The corollary to this was: In case of misplacement, restore your ligaments, and suspend the uterus. All the various procedures that have been suggested since that time, are but the application of this one predominating principle. Out of it came all the various operations for shortening the round ligaments, as well as the various methods of hysterorrhaphy.

But modify these operations as you may, both of them have failed to quite reach the mark of an ideal operation, and involve many serious objections. Alexander's operation is only applicable to cases in which the uterus is movable. Hysterorrhaphy converts a retroverted organ with adhesions to an anteverted organ, but with adhesions. Gynecologists, generally, now recognize anteversion as the normal position of the uterus. They also recognize the fact that if that position can be maintained, the force necessary to support the organ is reduced to a minimum. Through the facility gained in vaginal work by vaginal hysterectomy for cancer and fibroid tumors and the operations upon the appendages, came the suggestion of relieving retroversion by operative procedure through the same route. This was put into practical application by Mackenrodt and others, in the operation known as vaginal fixation. While this operation restored the uterus to its normal position, and relieved all symptoms, it was found by several German operators to bring more or less serious complication and disaster in those patients who became pregnant. The advantages to the patient of this procedure over Alexander's operation and abdominal fixation, were so apparent that those who had tried it were little inclined to surrender these advantages, without serious effort to so modify the operation that the unfortunate consequences might be averted. Mackenrodt's original operation, briefly stated, consisted in making an incision through the anterior wall of the vagina, and dissecting the bladder from

its attachments to the uterus, anteverting the uterus, and stitching its anterior wall directly to the edges of the vaginal incision. This procedure carried the fundus too low in the pelvis, and held it so firmly that in those cases where pregnancy occurred the anterior wall was prevented from taking its due part in the normal expansion of the uterus, and the fundus from properly rising out of the pelvis. It quickly became apparent that this difficulty might be overcome by allowing the uterus more freedom of motion, and various suggestions have been offered for accomplishing this object. The latest modification of the operation, and one which commends itself more fully than any other, has been suggested by Wertheim (*Centralblatt f. Gynäk.*, 1896, No. 10). His method consists in utilizing the round ligaments for attachment to the vaginal wall. After incising the vagina and dissecting off the bladder the finger is slipped over the fundus, the round ligaments are hooked up at a reasonable distance from the horn of the uterus, and attached on either side to the borders of the vaginal incision. The immediate results of the operation are excellent, but as no case of pregnancy after the operation has been reported, the crucial test of its value has not yet been applied. It seems reasonable to expect, however, that with the freedom of movement thus allowed the uterus the unfortunate consequences attending Mackenrodt's operation will be absent. It is also still uncertain whether the position will be maintained after parturition. If this shall prove to be a permanent relief of the displacement, and free from the disasters of Mackenrodt's method, it will score a great advance over both the Alexander operation and abdominal fixation.

A more careful analysis of the supports of the uterus points to the utero-sacral ligaments as a simpler and, from an anatomical and dynamic standpoint, more perfect means of retaining the correct posture of the uterus. When a woman is in the erect posture the uterus lies normally upon its anterior face; and if the cervix can simply be held sufficiently high in the hollow of the sacrum, gravity will carry the fundus to the front. The tissues that accomplish this are the utero-sacral ligaments. In all cases of retroversion, these ligaments must relax sufficiently to allow the cervix to descend in the pelvis before retroversion can occur. If, then, these ligaments can be made sufficiently taut to maintain the cervix at its normal level, the uterus must perforce be held in a position of anteversion. When these ligaments have become elongated, the indication would seem to be to shorten them. This principle has been applied recently by Gottschalk (*Centralblatt f. Gynäk.*, 1896, No. 16) in two cases, with perfect result. Briefly stated, his technic consists in catching the utero-sacral ligaments, after opening Douglas' pouch, near their attachment to the sacrum and stitching them to the posterior surface of the uterus, just above the vaginal attachment. The success of Gottschalk in two persistent cases of aggravated retroversion invites further trial of this procedure. The principle is undoubtedly correct. The method allows of thorough and careful treatment of the appendages, and therefore is the most perfect one yet suggested for dealing with retroversion.

ECHOES AND NEWS.

Killed but not Struck by Lightning.—Globular lightning set fire to a woman's dress, near Angers, France, the burns causing her death soon after.

Another Use for the X-ray.—A German observer points out that by the use of the X-ray, brick-dust can be traced in Cayenne pepper, sand in spices, and chalk in flour.

A Remedy for Depopulation.—As a means of stopping the depopulation of France, Dr. Janel, in a paper read before the Academy of Medicine, proposed to throw the burden of taxation from large families on to the rich.

The Amherst Infirmary.—The new infirmary at Amherst College, the gift of George D. Pratt of Brooklyn, will be erected by a Boston firm, and is to be completed on March 1st next. It will cost $17,000.

Quinin-growing in India.—The Government has declined to accede to the request of the private growers of cinchona that the Government plantation shall be discontinued and all supplies taken from the private growers.

Lunacy in Scotland.—The number of lunatics in Scotland for 1896 is 14,093, while in 1858 it was 5824. This is an increase of 142 per cent. The population has increased only 38 per cent. during the same period.

Fatal Case of Nose-bleed.—Julius Gottlieb, a law student, who had been affected with nose-bleed for about three weeks, died at Mt. Sinai Hospital, New York, September 12th. The cause of his death was pernicious anemia.

Two Insect Terrors.—An employee on a Mississippi steamboat died in great agony from a mosquito bite over the right eye. A ten-year-old boy of Marion County, Kan., was recently kicked in the eye by a grasshopper and the sight was immediately destroyed.

The Dangers of Decomposing Organic Matter.—The medical officer of health reported to the Tavistock, England, District Council several cases of diphtheritic croup, which had their origin in some children playing with the decomposing carcass of a sheep.

Floating Hospital Trips.—Forty-six thousand two hundred and fifty-three women and children were carried on the New York Floating Hospital during the season of 1896, which closed last week. Over 700 cases of severely ill children were treated in the wards without a death taking place on board.

Sanoform.—A substitute for iodoform has been introduced under the name of sanoform, by Gallinek and Courant. It is a bi-iodate of the salicylic methyl ether, without smell or taste, and unaffected by light. Being easily soluble in ether and vaselin it can be used like iodoform, in gauze, collodion, or ointments. It is a powerful desiccator, and prevents the decomposition of discharges.

Bicycling for Women Commended.—The Congress of Sanitary Institutes, which has been in session at Newcastle, England, has strongly endorsed bicycling as being the means of banishing a vast number of the derangements of women, and expressed the conviction that the average standard of the health of women bicyclists has undergone an appreciable elevation.

For a Biological Station.—The Hull gift of $1,000,000 for biological laboratories for the University of Chicago, has been supplemented by the proffer of $500,000 worth of property for a biological station. The donors are Mrs. Edward Roby, E. A. Shedd, and C. B. Shedd. The University will be enabled to control all the land and water it desires of the three thousand acres around Wolf Lake and the channel connecting it with Lake Michigan. Most of the necessary buildings for dormitories will also be given if the offer is accepted.

An X-ray Reform.—The Queen of Portugal, who is celebrated as a pursuer of the various fads of the hour, has been experimenting with the so-called X-ray. She has detailed the ladies of her court to serve as subjects, and has been making pictures of their skeletons. It seems that these gave such an alarming insight into the distortion wrought by tight lacing, that the female nobility of Portugal rushed to order gowns six or eight inches wider in their belt measure. It would be a curious instance of the unexpected turns of human affairs if tight lacing, denounced in vain by medicos and moralists, should finally be suppressed by Dr. Röntgen's invention, and fashion should turn to the Venus de Milo as her ideal of figure.

The International Congress of Psychology.—The third Congress of Psychology was held in Berlin, August 4th to 9th, under the presidency of Professor Stumpf of Berlin. Professor Flechzig, in a paper on association-centers, concluded that the frontal region of the brain is the location of associations of a higher and more abstract kind, and that in the region back of the motor, extending to the visual center in the occipital region, is a great center for the associations which bind the sense-functions together. Professor Lippe, in a paper on the unconscious in psychology, arrived at a return to the soul-substance theory—a hidden thing in which mental states, and especially tendencies of an active kind, may be preserved when we are not conscious of them.

Brooklyn's Supply Ponds to be Cleansed.—Brooklyn officials are working to remove the cause of the impure water that is being furnished to the residents of the city. The mains are flushed every day, some of the officials thinking the cause of the contamination is in the water mains, and not in the supply ponds outside the city. A careful analysis of specimens of the water derived from the various sources of supply shows that it contains no element which, in its present form, may be regarded as being deleterious to health. Engineer De Verona said the ten ponds that supply the city with water, are being carefully watched, and he does not think there will be any contaminating elements introduced into the supply from these sources. The ponds are to receive a thorough cleansing.

Obituary.—John C. Dixon, M.D., of Candor, N. Y., died August 8th, aged sixty-four years. He was a graduate of the Albany Medical College.—Emanuel F. Gerhard, M.D., a junior practitioner at Norristown, Pa., and an alumnus of the Jefferson Medical College, class of 1884, died August 13th, aged thirty-eight years.—James Northrup, M.D., a graduate of the old Geneva Medical School (now extinct) in the year 1857, and a physician of Woodstock, Ill., died August 8th.—William W. Waring, M.D., of Upper Marlborough, Md., died August 5th. He was a graduate of the University of Maryland Medical Department, in the year 1869.—George Dederick Holsten, M.D., of Brooklyn, died at Beaumaris, Ontario, Can., on August 21st, after an illness which had lasted more than three years. He was born in New York in 1857, and graduated in 1882 from the University of New York. Subsequently he became a specialist in dermatology, and won much success in his chosen line of work. He was president of the Brooklyn Dermatological Society, and editor of a paper devoted to the interests of the science.

Typhoid at League Island.—A report from Surgeon Siegfried of the battleship "Massachusetts," says that on August 31st he was compelled to transfer from the ship to the Brooklyn Hospital the fifth case of typhoid fever since that vessel was commissioned at League Island, June 10th, last. It appears that the battleship "Indiana," also fitted out at League Island, has also had sixteen cases of typhoid fever aboard in her very brief career. One of the "Massachusetts'" men died shortly after the vessel left the yard. The surgeon attributes the disease to the bad drainage of Philadelphia, and the condition of that part of the city nearest League Island, and recommends that no ships be commissioned or fitted out there until the conditions are changed. Surgeon General

Tryon, in his indorsement of the report, corroborates the statements, and adds that the four cases of typhoid which developed this summer on the "Bancroft," were directly traceable to the Schuylkill water supply. It is stated at the Navy Department that the "Dolphin" invariably develops cases of malaria after leaving the Washington yard, which is at a focus of sewers.

The Hygienic Value of Fruits.—Dr. Dupoury, in a Paris journal, divides fruits into five classes, each of which possesses a special hygienic value—the acid, the sweet, the astringent, the oily, and the mealy. To the first, including cherries, strawberries, raspberries, gooseberries, peaches, apples, lemons, and oranges, he accords great merit. Cherries he prohibits entirely to those affected with neuralgia of the stomach. Strawberries and raspberries he recommends to those of bilious, plethoric, and gouty temperament, and denies them to those in whom diabetes is present or suspected. Of the sweet fruits he considers that plums are of special hygienic value, and even a preventive in gout and articular rheumatism. He is an ardent advocate of what in Europe is called the grape-cure, in which grapes for several days form the exclusive aliment. The patient begins with the consumption of from one to two pounds daily, with a gradual increase to eight or ten pounds. After a few days of this diet, a marked improvement in the general health is noticeable. The appetite improves, the digestion becomes easy and rapid, and increased capacity to withstand the fatigue of outdoor exercises is noticeable. The grape-cure is particularly recommended to the anemic, dyspeptic, and consumptive, in diseases of the liver and in gout.

The Possible Individuality of Atoms.—Mr. Baly has recently published his conclusions on the two-fold spectra exhibited by oxygen and nitrogen. The popular persuasion is that all the atoms of a particular element are exactly alike. Gaseous molecules are free to move in any direction, and when gas or vapor is rendered luminous, as by passing an electric spark through it, unlike an incandescent solid or liquid, it does not give a continuous strip of color in the spectroscope, but a number of bright lines at intervals separated by dark gaps. If, while the bright lines are being observed, a beam from an electric light or limelight is directed toward the spectroscope, they are seen as dark lines upon the ribbon of variegated color, which distinguishes an incandescent solid. The change is supposed to be due to the absorption by the gaseous molecules of light of certain definite wave-lengths. Mr. Baly's observations go to show that the variability in the spectra of oxygen and nitrogen is due to some profound difference of condition in the gas under different circumstances. For the gas that collects about the point whence the sparks leap across the containing vessel, after a little while is slightly dimmer or lighter than at the other. One of two results must follow: Either those gases (oxygen and nitrogen) are not elements, or there are two kinds one with an atom a little heavier than the other.

"The Great Sin of Great Cities."—The correspondent at Rome, Italy, of the London *Lancet*, August 29th, considers, under the above caption, the question of the alleged increase, in that country, of venereal disease. He says: "Prostitution is a growing evil in Italy, and its Nemesis, syphilitic disease, is correspondingly on the increase. Attempts to control it are made from time to time, but hitherto with the result of driving it more and more into clandestine channels. The sanitary vigilance enforced against it and its pathological sequelæ thus loses in efficiency, till venereal maladies of every kind are becoming a formidable menace to the public health. In these circumstances, the Prime Minister, the Marchese di Rudinì, who also holds the portfolio of the Interior, has addressed a circular to the prefects throughout the kingdom, calling upon them to enforce the regulations imposed by law for the surveillance of prostitution and its victims. In a country like Italy, where, even in the army and navy, the regulation diet is none too generous or sustaining, the diffusion of such maladies is a public disaster, the low resisting power of the people not only favoring lesions of a kind unknown in better-fed communities, but depressing the standard of health by hereditary deterioration. The gross negligence with which the inspection of prostitutes was quite recently practised in garrison towns (Ravenna had an unenviable notoriety among these) compromised seriously the efficiency of the troops already exposed to unsanitary conditions, inducing frequent illness, and even premature breakdown."

CORRESPONDENCE.

CONFIDENCE MEN IN OHIO.

To the Editor of THE MEDICAL NEWS:

DEAR DOCTOR.—On or about the first of February last, a tall, well-built man, about thirty-five, smooth, forcible, but rather repulsive talker, a sort of "hail fellow well met," wearing a forced scowl, came into my office and introduced himself as Mr. Conway, representing Geo. A. Parker, Sons & Co., Local Reference Exchange, head office for New England, Boston, Mass., an organization for collecting accounts, especially old accounts. A small, rather slender young man representing himself as Mr. Conway's brother, and a tall, slender, dark-haired young man, whose name I do not know, were here with him, helping him work the town.

They established a local office here, and got nearly 250 of our best business and professional men to subscribe, and give their notes for $20.00 each, payable six months after date. My faith being good in this Mr. Conway's representations of his plan and work, I unwittingly gave him a good recommendation.

But recent developments lead me to recall that recommendation, as the concern is not worthy of such confidence. I have twice written to and asked this Mr. Conway to return my letter, to which he has seen fit to give no attention. Therefore I take this opportunity of protecting myself against any further influence that document may have, and warn at least my professional brethren against subscribing to the concern, for his statements are misleading, unreliable, and not worthy of confidence.

On inquiry, the Chief of Police of Boston, Mass., recently informed me that there is no such firm or concern as Geo. A. Parker, Sons & Co. Local Reference Exchange, in the city.

These parties agreed to send a letter every ten days to each debtor until five letters had been sent, then if payment had not been made, to sue the accounts and advertise the judgments at five hundred different places over the city. Nearly six months elapsed before the first and *only* list was made up and posted on bill-boards at nearer fifty than five hundred different places, and that list, on investigation, proved to be bogus, as neither the name nor residence of anyone on the list could be found.

They further represented that the only expense to a subscriber, when an account was sued, was ten per cent., and that not payable till the judgment was collected. When some of our members urged suit, they were politely informed they would have to put up costs.

As these fellows are going systematically from town to town throughout the State, I send this statement as a warning to my fellow practitioners that they may beware of them.

Yours very truly,

J. H. SEILER, M.D.

AKRON, OHIO,
August 25, 1896.

SOCIETY PROCEEDINGS.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-second Annual Meeting, held at Philadelphia, Pa., on Wednesday, Thursday, and Friday, June 3, 4, and 5, 1896.

FIRST DAY—WEDNESDAY, JUNE 3D.

The president, F. X. DERCUM, M.D., of Philadelphia, called the meeting to order and delivered an address on

THE FUNCTIONS OF THE NEURON.

The question had arisen in his mind as to whether the neuron was not an absolutely fixed morphological element, and whether it did not possess a certain, though perhaps, limited power of movement. He found that this thought had occurred independently to three other observers, one in Germany, and two in France. Ramon y Cajal, however, opposes the theory of the mobility of the neuron, and maintains that the neuroglia cells possess a great deal of mobility. He points out, for instance, that the neuroglia cells of the cortex are at times stellate, and at others much elongated. Their processes have numerous short arborescent and plumed collaterals. Two phases can be observed in them, first a state of contraction, in which the cell-body becomes augmented while the processes become shortened and the secondary branches disappear, and secondly, a state of relaxation, during which the processes of the neuroglia cells are again elongated. He further maintains that the processes of the neuroglia cells, in reality, represent an insulating or non-conducting material, and that during the period of relaxation they penetrate between the arborizations of the nerve-cells and their protoplasmic processes, and render difficult or impossible the passage of nerve-currents. On the other hand, when the processes of neuroglia cells are retracted, the various nerve-cell processes which they formerly separated from each other are now permitted to come into contact. It seems, therefore, that Ramon Cajal admits the very thing against which he contends.

Take the simple example of an hysterical paralysis and see how easily it may be explained. The neurons of a certain area of the cortex, for instance, retract the terminal branches of the neuraxon to such an extent that the latter are no longer in contact, or sufficiently near to the neurons in the spinal cord which supply the muscles of the paralyzed parts. When power is suddenly re-established in hysterically palsied limbs, it simply means that the terminal branches of the cortical neuraxon, previously contracted, are again extended so as to re-establish the proper relations with the spinal neurons. It would be interesting to follow out the ideas here brought forward in their application to the various phenomena presented by hysteria.

Turning to hypnotism, a ready explanation is afforded for the phenomena presented, and leaving this field entirely, we can see what an enormous value this interpretation of cortical action is for normal mental phenomena, taking for example the familiar instance of sleep.

J. J. PUTNAM, M.D., of Boston, read a paper entitled:

ACUTE NON-SUPPURATIVE HEMORRHAGIC ENCEPHALITIS.

A young boy was attacked suddenly, two weeks after having been ill with the mumps, with paralysis of motion of both eyes, and lids, deafness, coma, impairment of swallowing, right hemiparesis, and double optic neuritis. At the end of three months, however, he had recovered, except for slight double vision, and slight impairment of hearing and eyesight, and except that ever since the illness he had been subject to epileptiform attacks of short duration. These attacks were gradually becoming less frequent. Reference was also made to another case reported by the reader in 1892, where, besides other serious cerebral symptoms, including double optic neuritis, temporary loss of hearing had also occurred. The cases reported by Oppenheim were given in outline, and the interesting fact noted that his patients, like the one here referred to, were mainly children.

DR. LANDON CARTER GRAY of New York, asked if any of these cases had retraction of the neck.

DR. PUTNAM answered that he was not certain as to its presence in his own cases, but it was present in the other reported cases.

DR. GRAY thought that the best macroscopical description of hemorrhagic encephalitis had been given by Elam some years ago. All cases seen by him (Gray) had proved fatal. In many instances the diagnosis was attended with extreme difficulty. He had generally been willing to diagnose these cases as meningitis.

DR. JOSEPH COLLINS of New York, had observed a case of hemorrhagic encephalitis with autopsy, which corresponded with the description given by Oppenheim. He read the report of the autopsy which revealed old leptomeningitis, hemorrhagic encephalitis, and a pachymenin-

gitis hemorrhagica. There was no case on record in which these three conditions had been found associated.

DR. B. SACHS of New York, said that the recognition of this form of cerebral disease showed a distinct advance in neurology. He had observed four cases. Two recovered and two died. In one case there was some doubt as to whether it was meningitis or not, as there was slight retraction of the neck, but no positive coma. He looked upon it as a milder disease than basilar meningitis. In one of the patients who recovered, the cerebral symptoms appeared simultaneous with the fever. The former lasted four days, leaving the patient with slight ptosis and paresis of the external rectus.

DR. GRAY asked if fatal cases have shown more violent symptoms than those that recovered.

DR. PUTNAM replied that some of the more violent cases recovered. In general the rapid development of severe coma is considered an unfavorable sign. It is frequently quite difficult to distinguish this condition from meningitis. He believed that the severity of the symptoms depends on the amount of poison absorbed into the circulation. We do not yet know the exact significance of retraction of the neck, which is a very unreliable diagnostic sign. In one of his own cases of influenza, with symptoms of encephalitis occurring in an elderly person, the brain was found only edematous. Sometimes changes are unrecognizable with the naked eye.

WM. OSLER, M.D., of Baltimore, read a paper upon

GENERAL COMPLICATIONS OF RAYNAUD'S DISEASE.

After referring to the frequency with which Raynaud's disease is met with in forms of insanity, he said that in a few cases cerebral manifestations, due apparently to vascular changes, similar to those which develop in the peripheral parts, had been described. In the case of a man in his wards, already reported in 1891 by Dr. H. M. Thomas, in which epileptic attacks occurred in the winter months only, in connection with local asphyxia and superficial necrosis of the ears, the patient had also hemiglobinuria. In another case, a woman, aged fifty-two, during a period of six years, local syncope and asphyxia occurred at intervals in the fingers and hand of the right side, sometimes with aphasia, and on several occasions, with transient paralysis of the right arm and leg. In the final attack the patient died with gangrene of the right hand and arm. The case of Weiss is believed to be the only other instance in which aphasia complicated the disease. In a third patient "falling attacks" of an indefinite character occurred in a young girl with local asphyxia of the legs between the knee and ankle.

In answer to a question of Dr. Riggs, Dr. Osler answered that this disease was rarely fatal. This was the second fatal case with which he was familiar. The literature, however, indicates a number of fatal cases. He considered the complications as having no direct relation with the disease. The associated conditions were rarely serious.

DR. PUTNAM presented a series of photographs showing the development of cretinism at various ages.

WALTER CHANNING, M.D., of Boston, read a paper upon

TUMOR OF THALAMUS,

and presented a case. The patient was an unmarried woman of good heredity, and by occupation a school teacher. She was of an active, nervous temperament, and the subject of hay-fever and asthma until the spring of 1895, when she was under the care of a so-called "hay-fever specialist," and escaped the usual attack. Before admission to the hospital, November 29, 1895, she had been for some weeks mildly exhilarated, and extravagant in her ideas, but not enough so to interfere with her work until the 22d. The only physical symptoms she had complained of were headache and insomnia. Her disease was diagnosed by an alienist of experience as mild acute mania when she came to the hospital. Since her death, her friends have stated that she had weakness of the left arm before leaving them, but nothing was said of this in her history. She had expansive delusions and hallucinations of the taste and smell. She was unable to stand because of weakness in the left leg, and her left arm was weaker than the right, there being no power to move it above the elbow. Headache existed. There was little nausea. The pupils were equal in size and reacted to light. The eyes did not follow the finger. There was no ophthalmoscopic examination. The weakness in the left side was not so marked at the beginning as to attract special attention. It was later that its significance became apparent. Patellar reflex slightly exaggerated and alike on both sides; plantar reflex moderate; urine-color normal; reaction acid; specific gravity, 1022; urea normal; uric acid in excess; blood count, reds 4,804,000, whites 12,400. The mild maniacal excitement continued for the first week after admission. The patient was very restless in the bed, moving her head from side to side, and throwing her right arm over her head. She also often folded her arms rigidly across the chest, and clenched the fingers. After the first week she slowly sank into a stupor from which it was difficult to rouse her. The physical symptoms of central disturbance became rapidly more marked. There was entire loss of motion in the left arm, left leg, and later right leg, and extreme extension of both legs. The jaw became relaxed, interfering with respiration. The tongue fell back in the mouth. Breathing became jerky and irregular toward the end, and finally the relaxed jaw could not be replaced and death ensued. The autopsy was made by Dr. E. Wyllis Taylor of Boston, who found a boggy, cyst-like looking mass extending back an inch behind the posterior border of the optic thalamus and forward to the junction of the caudate nucleus with the thalamus, the mass apparently involving the latter in its entire extent. Microscopical examination proved the tumor to be a vascular glioma. The mental symptoms in this case seem to have been quite unlike those of the usual cases of brain tumor recorded, in which are found depression, dulness, irritability, stupor, and even pronounced dementia. Several interesting questions arise, as for instance: Which symptoms probably presented themselves first, the mental or physical? Why should there be so much mental disturbance in such a case? Was the mental trouble an accident, and independent of the tumor? If not, how can it be satisfactorily explained?

What diagnostic value do mental symptoms possess in cases of brain tumor?

DR. WHARTON SINKLER of Philadelphia, thought that the appearance of mental symptoms in thalamus tumors was of much clinical interest. In his experience, somnolence and mental symptoms were of frequent occurrence.

DR. GEORGE J. PRESTON of Baltimore, in this connection presented the specimen from a patient with hemiplegia and dementia, which showed a tumor occupying the right hemisphere, and a condition of condensing osteitis of the skull.

DR. CHAS. K. MILLS of Philadelphia, said that tumors of the brain have not only been confused with acute mania, but also with general paresis. It is sometimes very difficult to differentiate. It is not known that tumors, limited to the thalamus, produce any characteristic symptoms. They occasion mental symptoms on account of their destruction of associating cerebral fibers.

DR. SACHS had seen a case of brain tumor in a child in which mental symptoms predominated. The autopsy revealed a large tumor in the right frontal lobe. He did not feel convinced that the mental symptoms in Dr. Channing's case were attributable to the growth in the thalamus. Why might not this patient have had the mental disease independent of the tumor?

DR. THEODORE DILLER of Pittsburg, mentioned a case of tumor of the cerebellum in which the earliest symptoms were mental. The unexpected often happens in cases of brain tumor.

BURT G. WILDER, M.D., of Ithaca, N. Y., read a paper upon

THE ECTAL RELATIONS OF THE RIGHT AND LEFT PARIETAL AND PAROCCIPITAL FISSURES.

The parietal and paroccipital fissures may be either completely separated by an isthmus, or apparently continuous. When so continuous ectally, there may still be an ental and concealed vadum or shallow. Disregarding the vadum on the present occasion, the ectal relations of the two fissures may be designated as either continuity or separation. That continuity occurs more frequently on the left side has been noted by Ecker, Cunningham, and the writer. Hitherto, however, statistics have included unmated hemicerebrums as well as mates from the same individuals. The following statement is based on the cerebrums of fifty-eight adults of both sexes and various nationalities and characters. The speaker has examined forty-eight; the other ten have been accurately recorded by Bischoff, Dana, Jensen, and Mills. So far as these fifty-eight individuals are concerned, the most common combination, viz., left continuity and right separation is decidedly the rule with the moral and educated, less frequent with the ignorant and unknown, the insane and negroes, and does not occur at all in the murderers. The only instance of the reverse combination (left separation and right continuity) is an insane Swiss woman. The only two known to be left-handed represented the more frequent combination of left continuity and right separation.

JOSEPH COLLINS, M.D., of New York, read a paper upon

DOES ANTISYPHILITIC TREATMENT PREVENT THE OCCURRENCE OF THE DISEASES OF THE NERVOUS SYSTEM WHICH ARE CONSIDERED SYPHILITIC IN ORIGIN?

And pointed out that certain diseases of the nervous system occur sequentially to syphilis with such frequency that they are rightfully looked upon as syphilitic in their origin. These diseases are tabes, general paralysis, syphilitic spinal paralysis, and such exudative conditions as cerebral thrombosis. After briefly reporting the history and treatment in nearly one hundred cases observed in hospital, dispensary, and private practice, the writer concluded as follows: (1) Exudative and degenerative diseases due to syphilis, are most liable to show themselves at the end of the third and beginning of the fourth decade of life. (2) Thorough and prolonged administration of antisyphilitic remedies during the activity of the virus, does not seem to materially prolong this time limit. (3) That active and prolonged antisyphilitic treatment does seem to prevent the development of such diseases as locomotor ataxia and general paresis. This is true of degenerative diseases, though treatment may, however, have some effect in preventing the exudative diseases of the nervous system, such as syphilis of the spinal cord, disease of the blood-vessels, etc. (4) Cases of tabes and general paresis in which syphilis is confessed, and in which treatment has been most desultory and incomplete, are not more liable to the early development or to the severe manifestations of either of these two diseases than those in which the treatment has been all it should be. (5) That the administration of antisyphilitic measures in the most approved way, does not fulfil the requirements of cure, and that syphilis is often an incurable disease.

DR. OSLER said that his experience was diametrically opposed to the views of Dr. Collins. The majority of severe cases of nervous disease occurring in syphilitics were in those who had either been badly treated or not treated at all. Early, thorough, systematic, and prolonged treatment will prevent the development of degenerative disease of the nervous system in later life.

HENRY R. STEDMAN, M.D., of Boston, read a paper upon

PROGNOSIS AND DURATION OF ATTACKS OF MENTAL DISEASE.

He called attention to the fact that a general misunderstanding occurs in the community as to the curability of insanity. It is much more curable than is supposed. General paresis should not be classified among the insanities. The character of the disease has changed in the last fifty years, and our views and classification have therefore changed.

DR. GRAY said that to speak of insanity as an entity was as if one were to speak of all disease as an entity, and then go back to the old Carlyle tables of mortality for the prognosis of coryza, pneumonia, tuberculosis, typhoid fever, and cholera, while to refer to the old statistics of Pliny Earle was like referring to the hospital re-

sults of thirty or forty years ago, for guidance in the treatment of the present day. If we are to accept the statistics of results of the insane asylums, we are justified in analyzing their record, and then we are startled to find that no new type of mental disease, no original pathological observation, no new departure in treatment, and not one text-book has ever come from an American asylum, despite the millions of dollars and thousands of patients they have had at their command.

C. E. RIGGS, M.D., of St. Paul, reported a case of

PARAPLEGIA FROM HEMORRHAGE INTO THE SPINAL CORD DUE TO PERNICIOUS ANEMIA, WITH AUTOPSY.

He presented a series of spinal-cord sections.

SECOND DAY—THURSDAY, JUNE 4TH.

BURT G. WILDER, M.D., of Ithaca, presented a paper entitled

THE DORSAL SAC, THE AULIX, AND THE DIENCEPHALIC FLEXURE.

It was illustrated by specimens and photographs.

THEODORE DILLER, M.D., of Pittsburg, then read a paper upon

PROGRESSIVE MUSCULAR ATROPHY OF SUDDEN ONSET.

He related the details of a case which came under his observation three years ago, and stated that the sudden onset of palsy, followed by atrophy and the absence of sensory phenomena, led him to diagnose the case as one of poliomyelitis adultorum. The beginning of the patient's trouble was in an ophthalmoplegia. After an absence of two years the man again came under his care, when the atrophy and loss of power in the muscles had markedly increased. The biceps, triceps, scapular, and ulnar groups had become involved, and the finer movements of the fingers were lost, as was also the power of supination. At this time the patient was unable to adjust or remove his clothing unaided. There was a marked decrease in the response, both to galvanism and faradism, in the paralyzed muscles. Dr. Diller considered the case could be fairly regarded one of progressive muscular atrophy, as the progressive feature was for two years the most important feature of the case. Ophthalmoplegia, as a symptom of progressive muscular atrophy, must be rare, for but scant references are made to it in literature. Strychnin had a very marked effect in staying the progress of the disease.

WILLIAM BROWNING, M.D., of Brooklyn, described a presumably hitherto unrecognized alteration in the skin, entitled

PITTING ABOUT THE HAIR CUPS, A TROPHIC CHANGE IN THE SKIN IN CERTAIN NERVOUS DISORDERS OF CENTRAL ORIGIN.

From some seven or eight years' observation of such cases, he was able to give the limits of its occurrence. So far, it has been seen only in progressive muscular atrophy, of spinal origin, or in cases complicated with atrophy, evidently likewise due to chronic precornual disease. In other troubles attended by atrophy, as infantile palsy, neuritis, pseudo-hypertrophy, etc., it has not been found. It is hoped that it may prove a useful help in differential diagnosis, especially between the forms due to peripheral and central disease. The change consists of an areola-like faint depression, frequently oval, in the direction of the lines in the skin, though it may be irregular or circular in form, about the exit of each hair. Usually the depression is a trifle paler than the surrounding skin, resembling, but not really being, a minute scar. It is not observed in specially hairy regions like the scalp, but only over the seat of muscular atrophy, notably on the leg and thigh, though also on the upper extremities. All these patients had reached or passed middle life.

F. X. DERCUM, M.D., and WM. G. SPILLER, M.D., of Philadelphia, presented a paper on

A CASE OF SYRINGOMYELIA.

Three years after a strain of the back the patient began to suffer from pains in the legs, a band-like pain about the lower part of the chest, weakness in the lower limbs, and a spastic gait. Complete paraplegia with contractures, more marked on the right side, wasting of the lower limbs, paralysis of the bladder and rectum developed later. Cutaneous sensibility was lost in the legs, and upon the trunk as high as the nipple on the right side and a little above the umbilicus on the left. The sense of temperature was absolutely lost over the right arm, the right shoulder, and the right side of the neck, and also upon the adjacent part of the right side of the trunk above the nipple line. There was some analgesia of the right arm. The right shoulder-joint began to swell, and from rupture of the capsular ligament, cellulitis, with redness and local heat, was produced, but with little or no pain. In extension, the humerus assumed the position of a subglenoid luxation. Death was due to exhaustion.

At the autopsy the capsule of the right shoulder-joint was found much thickened and roughened on the inner surface. The head of the humerus had disappeared, the bone having been eroded to some little distance below the surgical neck. A cystic tumor was found in the axilla, containing a friable fatty material. The surface of the glenoid cavity was much eroded, roughened, and porous; it was abnormally large, and extensive bony deposit had taken place along its edges. The coracoid process exhibited a thick and firm accretion around its entire edge. Sections were made from the level of nearly every spinal root and from many spinal ganglia.

By the microscopic examination, degeneration of the crossed pyramidal tract was found as high as the substantia reticularis of the second cervical segment, and of the direct pyramidal as high as the motor decussation upon the right side, and for a short distance of the crossed pyramidal upon the left.

Degeneration of the direct cerebellar tracts and of the tracts of Gowers was traced as far as the inferior peduncles of the cerebellum. Intense pachymeningitis was noticed from the second lumbar segment to the exit of the third dorsal roots. The arthropathy of the right shoulder was not due to any special changes in the cord or spinal ganglia. The posterior roots were not affected, even where the pachymeningitis was most intense; the anterior

at one part of the dorsal cord were degenerated. In the entire cervical region, as high as the second cervical segment, the cavity was limited to the right posterior horn.

The gliosis extended from the extreme end of the conus terminalis to the second cervical segment. The microscopic examination explained satisfactorily the symptoms observed in life.

JAMES HENDRIC LLOYD, M.D., and JOSEPH SAILER, M.D., of Philadelphia, presented a paper on

RAPIDLY FATAL CEREBRITIS RESEMBLING CEREBRO-SPINAL MENINGITIS.

Fulminating cases of the infectious diseases, such as smallpox, scarlatina, measles, typhoid fever, and spotted fever, occur, in which the diagnosis is exceedingly obscure and the disease is usually quickly fatal. These cases, as a rule, have their most marked symptoms in the nervous system. There is a delirium passing into coma, with depressed cardiac and respiratory centers, high fever, and often a purpuric or hemorrhagic eruption, not always characteristic. These cases demand especially, (1) the determination of the exact effects upon the nervous system and (2) the determination of the microbe or toxic agent at work in any given case. The writers could only attempt the former study, as the paper was not intended to deal with the bacteriology of the subject.

The patient was a man, aged twenty-four years, who was taken suddenly with a chill, followed by fever and intense cephalalgia and radialgia. The patient passed rapidly into a condition of delirium merging into coma. Third-nerve paralysis supervened, and on the third day a copious purpuric eruption appeared. This eruption presented ecchymosis, and on the hands lesions like erythema nodosum. Blood and pus were found in the urine, and vomiting of blood occurred before death. The patient died on the sixth day. The autopsy revealed disseminated local lesions in the cerebrum, mid-brain, pons, and post-oblongata, some migrated leucocytes in the perivascular spaces, little involvement of the membrane, and a diffused nephritis. From extensive microscopic research the writers were able to report a disseminated local cerebritis. The infection had invaded the brain by way of the connective-tissue structures, blood-vessels, etc., and the nerve-tissues proper were invaded secondarily. From the clinical standpoint the case probably comes under the head of "spotted fever."

DR. OSLER said he should like to have heard more in regard to the condition of the kidneys in the case reported. The diagnosis of cerebritis and encephalitis can be readily made between cases of infectious fever and the former. Unless the basal meninges are involved, we cannot make a positive diagnosis of meningitis, as all these symptoms, such as retraction of the head and clonic contractions of the muscles, may be present in pneumonia, and yet nothing is found at the autopsy.

L. A. DUHRING, M.D., of Philadelphia, presented a case of

NEUROPATHIC DERMATITIS.

The patient had been under his observation for six years.

WHARTON SINKLER, M.D., of Philadelphia, read a paper by S. WEIR MITCHELL, M.D., on

THE EFFECTS OF THE FLUID EXTRACT OF ANHELONIUM LEWINII (THE MESCAL BUTTON).

It recited the personal experience of Dr. Mitchell as to the exhilarating effects, and the production of various visual hallucinations, etc., after the ingestion of a certain quantity of the drug.

WHARTON SINKLER, M.D., of Philadelphia, read a paper on

UNCERTAINTIES OF CEREBRAL LOCALIZATION.

CHARLES K. MILLS, M.D., and WM. G. SPILLER, M.D., of Philadelphia, read a paper on

A CASE OF CEREBRAL ABSCESS SITUATED AT THE POSTERIOR PART OF THE EXTERNAL CAPSULE.

The patient had never had earache, but had suffered during the summer of 1895 from severe headache. On December 20, 1895, he became unconscious and had three general convulsions which resembled those of epilepsy. It was noticed that he was partially paralyzed on the right side and that he could not talk properly. His condition later improved very much. On January 29, 1896, he had another attack of partial unconsciousness, without convulsions, but with aphasia and decided paralysis. On admission to the hospital he was in a condition of stupor; he did not speak when addressed, and had almost total right-sided paralysis, incontinence of urine and feces, and entire loss of pain- and touch-sense over the paralyzed side. He was found to have right homonymous hemianopsia and double papillitis, most marked in the left eye. Death occurred February 26, 1896. There was no evidence at any time of middle-ear disease. At the autopsy an abscess was found in the left hemisphere, just above the level of the callosum. Both tympanic membranes were normal. Microscopic examination of the pus from the cerebral abscess revealed only the ordinary *Staphylococcus pyogenes aureus*.

The occurrence of epileptiform convulsions at the time of the first attack of unconsciousness, probably due to irritation of the motor fibers within the internal capsule, is worthy of note as an instance of the difficulty in diagnosticating cortical lesions. It is not known in what portion of the body these convulsions began. The diagnosis was made of some morbid process located at the posterior part of the internal capsule, involving the optic radiations and causing pressure. The abscess occupied the posterior part of the external capsule, a portion of the lenticular nucleus, and extended downward into the subthalamic region, but to all appearances had not cut the fibers of the optic radiations nor those of the internal capsule. The loss of function in these tracts was probably due to pressure. The white matter of the first temporal gyrus was almost entirely destroyed, and fibers from the upper anterior part of the second temporal were also cut. As the cavity was very near the periphery of the first temporal convolution, it would not have been difficult for the surgeon to have emptied it. Hearing was probably not seriously affected, although word-deafness appeared to be

present. In view of the frequency of cerebral abscess after suppurative processes in the lungs, it may be added that merely spots of catarrhal pneumonia were found in both lungs at the autopsy. No degeneration was noticed anywhere in the motor tract. At all parts a good half-inch of sound tissue existed at the posterior part of the internal capsule in the area corresponding to the optic radiations and the tract of Turck. It has been claimed by Dejerine that fibers arise in the temporal lobe (especially in the second and third convolutions) pass inward below the putamen, join the posterior part of the internal capsule in the subthalamic region and then form approximately the external fifth of the cerebral peduncle. No fibers from the occipital lobe are found in this lateral bundle of the crus. Dejerine has found this tract of Turck degenerated in six cases of lesions involving the middle and inferior part of the temporal lobe. In the case reported the fibers from the first temporal gyrus were almost entirely destroyed as well as those from the upper anterior part of the second temporal convolution, and as no degeneration was found within the lateral bundle of the peduncle by the method of Marchi sixty-eight days after the first attack and twenty-eight days after the second, certainly a period sufficiently long for this method. The authors consider that the case demonstrates the fact that no fibers from the first temporal and the upper anterior part of the second temporal gyrus, including a portion of the upper middle of this gyrus, enter the fasciculus of Turck. This does not render impossible or improbable the origin of such fibers in the lower anterior and the whole of the posterior part of the second temporal and in the whole of the third temporal gyrus. The fibers which enter the first temporal gyrus are probably connected with the sense of hearing, and, being sensory, probably do not degenerate downward, which accounts for the absence of secondary degeneration in the peduncle.

B. SACHS, M.D., and A. G. GERSTER, M.D., of New York, read a paper on

THE SURGICAL TREATMENT OF FOCAL EPILEPSY; A CRITICAL ANALYSIS OF THE RESULT IN NINETEEN CASES.

The authors' views and experiences are summed up in the following conclusions: (1) That surgical interference is advisable in those cases of partial epilepsy in which not more than one, or at the utmost, two years have elapsed since the traumatic injury or beginning of the disease which has given rise to the convulsive seizures. (2) In case of depression or other injury of the skull, surgical interference is warranted, even though a number of years have elapsed. But the prospect of recovery is brighter the shorter the period of time since the injury. (3) Simple trephining may prove sufficient for a number of cases, and particularly in those cases in which there is an injury to the skull or in which a cystic condition is the main cause of the epilepsy. (4) Excision of cortical tissue is advisable if epilepsy has lasted but a short time and if the symptoms point to a strictly circumscribed focus of disease. (5) Since such cortical lesions are often of a microscopical character, excision should be practised even if the tissue appears to be perfectly normal at the time of operation, but the greatest care should be exercised in order to make sure that the proper area is removed. (6) [Surgical interference for the cure of epilepsy associated with infantile cerebral palsies may be attempted, particularly if too long an interval has not elapsed since the beginning of the palsy. (7) In cases of epilepsy of long standing, in which there is, in all probability, a widespread degeneration of the associated fibers, every surgical procedure is absolutely useless.

JOSEPH COLLINS, M.D., and A. WIENER, M.D., of New York, presented

A CONTRIBUTION TO THE PATHOLOGY OF EPILEPSY AND A RÉSUMÉ OF THE UTILITY OF OPERATION IN EPILEPSY.

This was a report of two cases in which a portion of the cortex was excised. The first case was that of a young man, twenty years of age, with the usual symptoms of focal epilepsy, the patient having had but three attacks. The cortical area for the right hand was cut out. Microscopical examination of the tissue showed chronic meningo-encephalitis, obliterative changes in the blood-vessels, changes in the ganglion cells of a degenerative character, and the formation of neuroglia tissue in the softened area. The patient was operated upon a year ago, and has since been free from epileptic attacks. The second case was that of a married woman, thirty years of age, who had epilepsy for six years of a focal character at first, which later became general. A similar operation was performed, and the cortex showed unmistakable pathological changes.

W. W. KEENE, M.D., of Philadelphia, and H. M. THOMAS, M.D., of Baltimore, reported a

CASE OF A LARGE TUMOR REMOVED FROM THE BRAIN WITH WIDE OPENING OF THE LATERAL VENTRICLE.

The patient, a young man of nineteen, with an excellent family and personal history, and no history of accident, in December, 1895, had an attack of intense headache and vomiting, but without optic neuritis. The latter symptom followed in the middle of January, with later blindness in right eye, slight vision remaining in the left; slight protrusion of left eyeball, pupils equal and normal, smell, hearing and taste unaffected. Paresis of the lower right face, sensation and the muscles of mastication unaffected, no muscular weakness in either the arms or legs, but there was a good deal of muscular restlessness of the right hand, persisting even during sleep. Reflexes present. Mental condition poor. He was dull and apathetic and sometimes slightly wandering mentally. After the early headache and vomiting neither of these was a marked feature. There was slight aphasia. Drs. Osler and Starr saw the patient with Dr. Thomas, and the conclusion was reached that it was a tumor in the left frontal lobe, most likely at the base of the second frontal convolution and probably subcortical. On May 10 Dr. Keene operated. The tumor presented through a rupture of the cortex at the base of the second frontal convolution as had been diagnosticated. The tumor was easily scooped out by the fingers. The lateral ventricle

was then seen to be widely open. After the operation there was no increase of the paralysis. In two weeks the patient had entirely recovered. The tumor was 7.5 cm. long, 5.5 cm. broad, and 4 cm. deep, and weighed two and a half ounces. It was a hard non-infiltrating sarcoma.

DR. A. G. GERSTER, of New York, confined his remarks principally to craniotomy in reference to cases of epilepsy. He spoke of the dangers in the use of the trephine and chisel, and recommended the bone-flap operation as introduced by Krause and performed by aid of the chisel and rongeur. He considered all of these methods unsatisfactory and too slow. He exhibited the electrical saw by Krause.

The greatest danger in cranial operations is due to hemorrhage on account of the prolonged time of the operation. Therefore, any apparatus is desirable that will enable the surgeon to work with rapidity and safety. He presented an American apparatus based on the principles of the dental drill, and said he had used the instrument with satisfaction in four cases.

DR. M. A. STARR had seen twenty-four cases operated upon but none were cured. He has never recommended, and will not recommend, operation in idiopathic epilepsy. He has always had the advantage of a skilful operator. These operations should only be done by surgeons who have special experience in this line of surgery, and not by the general surgeon. The exsection of cysts is very unsatisfactory as death on the table has often followed. He had seen cases operated on very early in infantile epilepsy, due to meningeal hemorrhage, without favorable result. When brain tissue, either scar tissue, or normal tissue, has been excised, the attacks have also recurred. Of eleven cases of brain abscess operated upon, three recovered. All of these were seen at the various hospitals, and were usually subsequent to ear disease. He could not agree with Macewen's view as to the simplicity of diagnosis of cerebral abscess. He thought the day of trephining was over. The last operation witnessed was done in 14½ minutes by chisels and gouges.

DR. W. W. KEENE spoke at length on the report of the case presented conjointly by him and Dr. Thomas, and considered the prognosis favorable. The removal of large tumors seems to be less dangerous to life than small ones, as in the search for the latter we are likely to damage the brain extensively. It is only within the last ten years that cranial surgery really began. His experience had been moderately large. He agreed with Dr. Starr as he (Dr. Keene) had not seen a single case of epilepsy cured by operation. He would be unwilling to accept even two years, but thought three years preferable as the limit for disappearance of attacks after operation. He had, however, seen considerable amelioration and, therefore, thought it worth while to operate in certain cases. He would not operate in cases of general idiopathic epilepsy. The sooner the operation is done after the injury or the beginning of epilepsy the more favorable the prognosis. After epilepsy had existed five or six years, he would hesitate in operating. He concluded that we must have twenty years of experience in cerebral surgery before this matter can be satisfactorily settled.

DR. J. H. LLOYD presented a patient with right hemiplegia and contracture, unilateral sweating and flushing of the face, and dilation of the pupil, and looked upon the latter symptoms as due to an irritative lesion of the thalamus.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 25, 1896, TO AUGUST 31, 1896.

Major Henry S. Turrill, Surgeon, upon being relieved from duty at Fort Riley, Kan., is ordered to Willets Point, N. Y., for duty, relieving Major Egon A. Koerper, Surgeon.

Major Koerper, upon being thus relieved, is ordered to Fort Crook, Neb., for duty.

First Lieutenant Frederick P. Reynolds, Assistant Surgeon, is relieved from duty at Fort Clark, Tex., and ordered to Fort McIntosh, Tex., for duty, relieving First Lieutenant Robert S. Woodson, Assistant Surgeon.

Lieutenant Woodson, on being thus relieved, is ordered to Jackson Barracks, La., for duty at that station, relieving Captain Junius L. Powell, Assistant Surgeon.

Captain Powell, on being thus relieved, will report to the president of the examining board appointed to meet at the office of the Surgeon General of the Army, for examination for promotion, and upon conclusion of examination, is ordered to Fort Riley, Kan., for duty, relieving Major Henry S. Turrill, Surgeon.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDED AUGUST 31, 1896.

BAILHACHE, P. H., Surgeon. Detailed to represent Service at meeting of American Public Health Association, August 24, 1896.

PURVIANCE, GEORGE, Surgeon. Relieved from duty at Philadelphia, Pa., and directed to proceed to St. Louis, Mo., and assume command of Service; August 25, 1896.

HAMILTON, J. B., Surgeon. When relieved from duty at Chicago, Ill., to proceed to San Francisco, Cal., and assume command of Service; August 25. 1896.

CASSAWAY, J. M., Surgeon. Granted leave of absence for thirty days from October 1, 1896; August 24, 1896.

GODFREY, JOHN, Surgeon. When relieved from duty at San Francisco, Cal., to proceed to Chicago, Ill., and assume command of Service; August 25, 1896.

WHEELER, W. A., Surgeon. When relieved from duty at Ellis Island, N. Y., to proceed to Cincinnati, Ohio, and assume command of Service; August 25, 1896.

BANKS, C. E., Surgeon. To proceed from Washington, D. C., to Boston, Mass., for temporary duty; August 21, 1896.

CARMICHAEL, D. A., Passed Assistant Surgeon. Granted leave of absence for thirty days from September 5, 1896; August 17, 1896.

WASDIN, EUGENE, Passed Assistant Surgeon. Granted leave of absence for five days; August 25, 1896.

BROOKS, S. D., Passed Assistant Surgeon. Directed to rejoin station at St. Louis, Mo., and when relieved from duty at that place to proceed to Port Townsend, Wash., and assume command of service; August 25, 1896.

WHITE, J. H., Passed Assistant Surgeon. Relieved from special duty at Key West, Fla., and directed to rejoin station at New York; August 24, 1896. Detailed for duty in connection with Immigration Service at Ellis Island, N. Y.; August 25, 1896.

CARRINGTON, P. M., Passed Assistant Surgeon. To proceed to Chicago, Ill., and assume temporary command of Service; August 25, 1896.

KINYOUN, J. J., Passed Assistant Surgeon. Detailed to represent Service at meeting of American Public Health Association; August 24, 1896.